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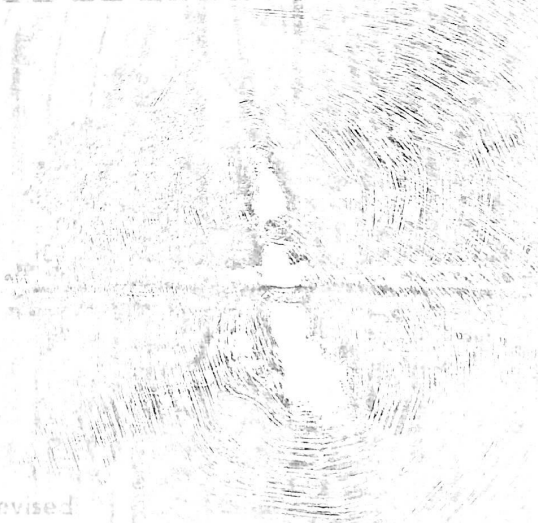
TREES of ARKANSAS



Revised

by

Dwight M. Moore

Arkansas Forestry Commission
Little Rock

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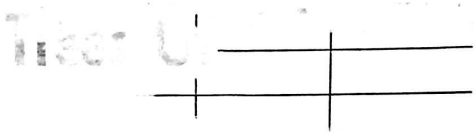

By Dwight Munson Moore, Ph.D.

Emeritus Professor of Botany
University of Arkansas
and
Former Professor of Forestry
Arkansas Agricultural and Mechanical College
Monticello, Arkansas

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TABLE OF CONTENTS

	Page
Trees of Arkansas	3
Enemies of the Forest	3
Native Tree Species in Arkansas	4
The Forest Regions of Arkansas	5
Big Trees and their Measurement	8
Illustrations of Terms	9
Some Terms you should Know	10
How to Identify a Tree by Use of a Key	11
Key to Trees in Summer	12
Key to Trees in Winter	16
Description of Species	20
Some Less Common Trees and Shrubs	134
Index	137

FOREWORD

This handbook is a revision and enlargement of a similar one published in 1960 by the Arkansas Forestry Commission, and that a revision of one published by the Arkansas Resources and Development Commission, Division of Forestry and Parks, in cooperation with the University of Arkansas.

Other previous publications on Arkansas Trees were "Common Forest Trees of Arkansas" 1924, by Dr. John T. Buchholz, Prof. of Botany, U. of A. and Wilbur R. Mattoon, Extension Forester, Forest Service, U. S. Dept. of Agri. and published by the University of Arkansas, College of Agriculture and the U. S. Forest Service. In 1937 another one, in slightly different format, was prepared by Dr. Lewis M. Turner, Dept. of Horticulture and Forestry, U. of A., and published by the Extension Service, College of Agriculture, U. of A., and the Department of Agriculture, cooperating. The edition of 1960 was prepared by the present author, who, at that time was Professor of Forestry, Ark. A & M College.

In that edition and the present one, the names used are based mostly on the *Checklist of Native and Naturalized Trees of the U.S.* by Elbert L. Little, Jr. published by the Forest Service as Agri. Handbook No. 41, 1953. For some introduced species, data was obtained from *Manual of Cultivated Trees and Shrubs*, by Alfred Rehder.

The cuts used herein were secured from the U. S. Forest Service from drawings by Mrs. A. E. Hoyle of that agency; others were prepared by Lewis M. Turner and the author.

The records for largest trees have been obtained largely through the efforts of the Arkansas Chapter of the Society of American Foresters and the Arkansas Forestry Commission, as well as the author. Records for the rest of the United States are as published by the American Forestry Association in the "Social Register of Big Trees". These records are presented with the understanding there may be many other larger trees in the State which have not been measured or measurements submitted for consideration. The reader is urged to submit measurements of any larger trees to the Arkansas Forestry Commission, Little Rock, Arkansas or to the author at 506 Vandeventer Avenue, Fayetteville, Arkansas.

To all who have in any way helped in the preparation of this little book, grateful acknowledgement is hereby extended.

TREES OF ARKANSAS

Arkansas is essentially a forest state. From the time white men first saw the land that is now Arkansas, the greater part of it has been covered with trees. At that time approximately 85 per cent was covered with forest of one kind or another. Even now, more than half of the state is still forested. True, most of this area has been cut over and the best trees taken out for lumber and other forest products, but with care and attention, much of this land can still produce a continuous harvest of timber.

Not only are the trees valuable for the forest products they produce but they also help protect the land from erosion, and thus aid in preventing our streams from overflowing. Forests are also of great value in offering places for pleasure and recreation and in providing a home for wildlife.

Trees are one of Arkansas' most important crops. They support a payroll of around $160,000,000, and yield products worth close to $500,000,000. In addition to the trees which grow here naturally, many have been introduced from other lands, either as ornamental or as otherwise useful plants. Some of these have multiplied so extensively that they have become fairly well established, at least in certain localities within the state. The trees described in this handbook include both the larger and more important ones native to the state, some which are less important, and others that have been introduced. Among the latter are included several which have been planted by the Forest Service in recent years. These may eventually make up fairly large stands of trees in the forests of the state.

It might be emphasized that the climate and soils of Arkansas are adaptable for supporting a greater variety of trees than now grow here. The factors involved in the production of new trees are varied. In nature, the first necessity is to have the seeds get into a new locality. Then local conditions determine which of those seeds will survive. Only those that get into places suitable for them will grow to maturity. The most important factors are water supply, light, aeration, and temperature. There is more or less competition between the numerous plants growing in a particular spot. The seedlings that can tolerate the conditions in which they start may survive; those that cannot overcome the competition eventually will be killed out. By controlling the young seedlings and other young growths in any forest, or eliminating unfavorable competition, it is quite possible for the landowner or forester to determine the kind of forest he will have in the next 50 or 100 years. Through proper management a forest can be made to produce a continuous crop of valuable timber.

ENEMIES OF THE FOREST

Trees that survive the natural competition of other plants and various environmental conditions may still not be safe. There are many other hazards.

Attacks by disease and insects frequently make serious inroads on our forests. In our eastern states the American Chestnut, once a major source of excellent timber, has been practically exterminated by the Chestnut blight, and our Chinkapin is susceptible and already shows loss in some areas. Elms in the North one-third of Arkansas have been severely reduced by the Dutch Elm Disease, Phloem Necrosis and others. The Black oaks are being killed by the Oak Wilt, this disease has been found in Arkansas forests for a decade. Keen watchfulness should be exercised to avoid the repetition of the disaster of the chestnut.

Among the more serious insect pests of the forests of Arkansas are the Black turpentine beetle and the Ips both of which attack our pines, and these same trees are often badly deformed by attacks of the Pine tip moth, which kills the terminal buds of younger trees thus causing repeated branching with a resultant damage to a straight bole. Tent caterpillars damage our wild cherries and plums, and the Fall web-worm damages the foliage of walnuts, hickories, persimmons, and others with a consequent reduction in annual increment.

But fires are the most serious enemy of forests. Many people believe that burning the dry leaves and grass in forests and woodland will improve the grazing. This is a serious error and very shortsighted. Fire destroys the leaves and litter on the ground which help to protect the surface soil, thus exposing it to the action of rain, frost, and wind. The resulting erosion ruins the land, uncovers tree roots, fills streams with silt and mud, and thus increases the frequency, seriousness, and damage of floods. Trees themselves are usually injured to such an extent that butt rot or heart rot will follow, rendering the trees either wholly unfit for use or reducing their value. While grass and other herbage may appear a little earlier in the spring following a fire, thus making the fire appear to favor grazing, the water-holding soil cover has been destroyed and, in most cases, the soil will dry out quickly when dry weather sets in, with the result that the forage dries up much sooner. If continued, this practice will tend to eliminate many of the more valuable trees that cannot live without adequate soil water. Fires also kill seedlings that would reproduce the trees, and usually result in numerous defective sprouts from the roots of trees killed above ground. These will seldom produce first class timber, even if left unmolested from that time on. The slogan, "Everybody loses when the forest burns," is a true one.

NATIVE TREE SPECIES IN ARKANSAS

There are approximately 200 species of trees native to Arkansas. With the many varieties and hybrids, the total would come very close to 300. This is a very good representation of the nearly 1,200 different forms of trees recognized for the United States. In addition, the State is well supplied with other woody plants, including a great many large shrubs, often of nearly tree size and form, together with a great many woody vines. When the varieties and hybrids of all these are counted, it brings the number of woody plants in the state well above

500. The hawthorns are the best represented of all, with 63 different species and varieties recognized for the state. Next to this, the oaks stand out with 41 different species, varieties, and hybrids. The hickories come third with 23 different species and varieties. Of the saw timber growing in Arkansas, over 83% is pine, oak, and gum.

THE FOREST REGIONS OF ARKANSAS

The topography of Arkansas divides it readily into several rather definite areas, and these quite naturally determine the forest types.

(1) THE OZARK-OUACHITA MOUNTAIN AREA occupies, in the main, the northwest half of the state. It is cut through the middle by the valley of the Arkansas River. This area in general includes a great variety of hardwood or deciduous trees, with a very good admixture of shortleaf pine. The pine is more abundant south of the Arkansas River, in the Ouachita Mountain area, where it makes up a fairly large proportion of most of the forests. North of the Arkansas River, the shortleaf pine occurs mainly in the central northern half of the state. In general, the south slopes in the mountainous area are best adapted to the production of pine, while the northern exposures, which are usually more moist, are better for hardwood trees, especially maples, oaks, ash, and hickory. In the southwest half of the area, both shortleaf and loblolly pines are considerably in evidence. The shortleaf pine predominates in the upper, more rugged portion, and the loblolly is in great quantity in the southern fifth of the State, where the land is lower and more sandy.

(2) The GULF COASTAL PLAIN and (3) the BOTTOM LANDS OF THE MISSISSIPPI AND ARKANSAS RIVERS occupy the southeastern half of the State and, in this area, two distinct types of forest may be found. In the coastal plain, which is sufficiently higher than the river bottoms, more pine, both shortleaf and loblolly, will be found than in the river bottoms. In the bottoms of both rivers, pine is almost entirely absent. It is more often replaced by the bald-cypress, which grows well in places that are frequently flooded.

(4) A fourth area is represented in CROWLEY'S RIDGE, a low ridge of somewhat rounded hills, extending from near the northeast corner of the State almost due south, and curving back toward the Mississippi River near Helena. This has a distinct type of forest which most nearly resembles that of the Appalachians.

1. The Ozark-Ouachita Mountain Region

A. The white oak - red oak - black oak type is the most valuable in this region. It occurs most commonly on north-facing slopes and in ravines and smaller stream valleys. In this type are found, in various proportions, the following: white, northern red, black, bur, and chinkapin oaks; shagbark, mockernut, and bitternut hickories; sugar and red maples; Amer-

ican and slippery elms; white ash; black gum; basswood; hackberry; chinkapin; black walnut; black cherry; yellowwood; beech; and many others. This type has been severely cut over, particularly the white oaks.

B. The post oak - blackjack oak - black hickory type is an extensive and common one occupying the driest and most unfavorable sites. With it are found persimmon, winged elm, red haws, eastern redcedar, gum bumelia, and black and southern red oaks. This is a very inferior type.

Between the two extremes (A and B) listed above, there may be several intermediates including various combinations of the species mentioned, as well as others.

C. The eastern redcedar type is found extensively on the calcareous soils in the northern part of the region especially along the White River. While this redcedar makes almost pure stands in some places, it is usually mixed with winged elm, blackjack oak, blue ash, and, in many of the more exposed places, large proportions of Ashe juniper. With the exception of the last named species, this type also occurs in the poor soils in the foothills of the mountains bordering the Arkansas River valley.

D. The silver maple - river birch - elm type is found in many of the stream valleys in the mountainous region. With these are also found green and white ash; pecan; sweet gum; sycamore; boxelder; Shumard, bur, and chinkapin oaks; and several others. While this type was once abundant in the valleys, it now is found only near streams, due to clearing of the land for farms.

E. The shortleaf pine - oak - hickory type is in greatest evidence in the Ouachita Mountain area, but occupies certain areas in the central part of the Ozark region. In addition to the prevalent shortleaf pine, several oaks and hickories, black gum, red maple, winged elm, hackberry, and persimmon are found here. Where the soil is not too thin, this may develop into a very good type. With suitable guidance, much of the Ozark region could be converted into this type which is of much more value than the poorer oak-hickory types of the Ozarks.

2. Coastal Plain Region

A. In this region, as in the mountains, there may be found large areas covered by the oak-hickory type. In the most favorable places will be found white, northern red, chinkapin, and Shumard oaks; and shag-bark, mockernut, and bitternut hickories, with the species conforming very closely to the same type in the mountainous region. This blends through less favorable sites to the post oak, blackjack oak, and black hickory type.

B. The willow oak type occurs on flat, poorly drained soils with many variations but may contain willow, water, overcup, and southern red oaks; sweet and black gum; red maple; elms; and sugarberry.

C. Loblolly pine may occur in combination with several of these species or, in some areas, form almost pure stands. It is one of the outstanding timber trees of the southern part of the state, but may be matched in stands with the shortleaf pine. In general, the shortleaf pine occurs on the upland areas and the loblolly in the lower, more or less sandy places.

3. The Flood Plains of the Mississippi and Arkansas Rivers

In this region, two distinctive forest types may be found, determined by the relative elevation and liability to prolonged overflow.

I. The First Bottoms

A. The baldcypress - water tupelo forest is found in the wettest of these forested areas. Here are also found Nuttall oak, swamp cottonwood, water hickory, green and Carolina ashes, and planertree.

B. The willow-oak type, as mentioned above, occurs on low clay ridge sites. Green ash and sweet gum are common, but there is no southern red oak nor black gum. This is a very good type.

C. The overcup oak - water hickory type occurs extensively in low, poorly drained sites, especially back water areas. Here also are found green ash; pin, willow, and Nuttall oak; persimmon; winged elm; and red maple.

D. The sweet gum type, found on higher, better drained ridge soils in the first bottoms, is a very valuable type. This also includes water and willow oaks, sugarberry, and green and white ash.

E. The sweet gum - cherrybark oak type commonly occurs on higher, well-drained flats and ridges with loamy soils. This type, including also swamp chestnut and water oaks, ashes, hickories, and black gum, is very valuable.

II. The Second Bottoms (Terraces)

On the more poorly-drained, hard, flat sites in the second bottoms occurs the willow-oak type much as described for the coastal plain but better, and, in the better flats, the sweet gum type. On the better drained terrace ridge sites the previously described oak-hickory type occurs at its best, or, very rarely, in mixtures with loblolly pine.

4. Crowley's Ridge

While this ridge is relatively small in area, it exhibits quite a variety of species. On the drier top will be found the oak-hickory combination of much of the Ozark region, and where it joins the river flood-plains below, the forest will resemble that type. But on the more sheltered north slopes and spreading out from these will be found a richer assortment of broadleaf trees that anywhere else in the state. This would include tulip-

tree; cucumber tree; basswood; white, northern red, and chinkapin oaks; several hickories; ashes; maples; cherry; walnut and butternut; and beech. This is the only area in the state where the tuliptree occurs naturally.

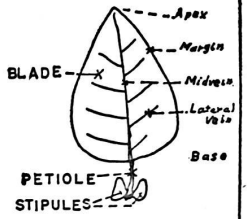
BIG TREES AND THEIR MEASUREMENT

Trees are usually measured in three dimensions: circumference, or diameter, if a diameter tape is available, taken at breast height, 4½ feet, from the ground level. These are designated as cbh and dbh—"circumference or diameter at breast height." The height of the tree and the spread of its major branches are also included in the consideration of the "bigness" of a tree. It has been suggested by the American Forestry Association, that the following formula be used in arriving at a figure to include all these measurements:

Circumference in inches
plus Height in feet,
plus ¼ the spread in feet.
Total Bigness Index. (B. I.)

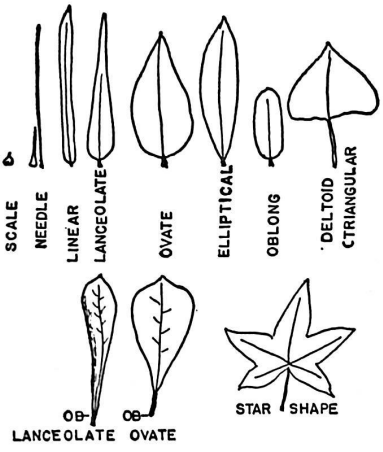
This term, "Bigness Index" is suggested by the present author, and is used for the figures of all trees for which all three dimensions were available. It is a relative figure which may prove valuable in designating the "bigness" of trees.

SIMPLE COMPLETE LEAF

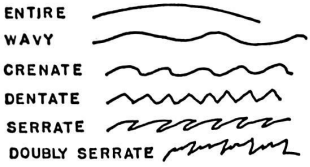


COMPOUND LEAVES

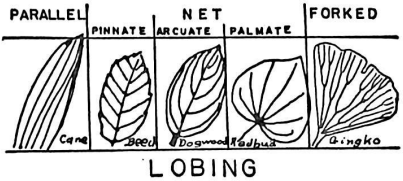
LEAF SHAPES



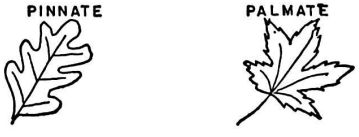
LEAF MARGINS



VENATION



LOBING



SOME TERMS YOU SHOULD KNOW

LEAVES appear at definite positions on STEMS. These positions are called NODES. If only one leaf at each node they are ALTERNATE, if two at each node, they are OPPOSITE, and if there are three (or more) as in the Catalpa, they are said to be WHORLED.

A COMPLETE LEAF consists of a usually broad flat portion, the BLADE, on a long or short stalk called the PETIOLE (NOT "STEM"), at the base of which there are usually two appendages called STIPULES. These may fall off early as the leaves unfold, or they may persist as long or longer than the leaves do.

If the blade is all in one piece, regardless of how it may be lobed or indented, the leaf is said to be a SIMPLE LEAF, but if the blade consists of two or more separable parts, it is a COMPOUND LEAF, and the parts are called LEAFLETS, and the central axis to which they are attached is the RACHIS. Some leaves are quite SYMMETRICAL, or even on both halves, but other like elms and hackberries, are frequently uneven or UNSYMMETRICAL at the base.

The Margins of leaves are often quite distinct. If it is not wavy or indented at all, it is ENTIRE; it may be WAVY, more or less scalloped, CRENATE, or toothed with straight teeth, DENTATE. If the teeth are turned upward toward the apex, the margin is SERRATE, and if these teeth have smaller teeth on them it is DOUBLY SERRATE.

When any structure falls from the tree it usually leaves a distinct or characteristic scar. Thus there are LEAF SCARS, STIPULAR SCARS, and FRUIT SCARS which may be useful in recognizing various species of trees and shrubs. In the cases of Magnolias and the Sycamore, the stipules are attached entirely around the twigs and leave scars encircling the stems at the nodes. This is very helpful in recognizing these species in winter condition.

HOW TO IDENTIFY A TREE BY USE OF A KEY

A key is designed to lead the user, by careful selection from a series of contrasting features, to the correct identity of the specimen in question. In summer and fall, leaves, flowers, and fruits may be available and are often so very distinctive that they alone will serve to identify the tree. However, not all trees have such distinctive features, and various combinations of features must be used.

As an example, suppose we have a specimen of black locust, in summer. Turning to the Summer Key, P. 12, we have the choice of A_1 Leaves Evergreen or A_2 Leaves Not Evergreen. Since it is evident that the leaves of this tree fall each autumn, we are directed to "F". The description of F_1 does not fit so we look at F_2 "Leaves larger, broad, flat; fruit not a woody cone," which fits and we proceed to G. The first G fits, for the specimen usually has a pair of short spines at the base of each leaf. Next we find that H_2 fits better than H_1. At J_1 we find the trail of "At least some spines in pairs at the base of compound leaves" and go on to K. K_1 fits exactly and we have the identity as Black Locust (*Robinia*), and turn to the page indicated. However, there are times when this same tree may *not* have any evident spines. In that case then, the search would go to G_2, instead of G_1, and then to P. P_1 "Leaves compound (blade in more than one part)" fits our sample and leads to Q. As Q_1 does not fit we proceed to Q_2 "Leaves pinnately compound," and on to R. R_2 fits better than R_1 and so does T_2. At V the choice is in the kind of fruit. This may not be too evident at certain times of the year, but some of these can usually be found on or under such trees except in the case of young trees. V_2, "Fruit a small flat pod," leads us to the name Black Locust (*Robinia*).

Thus the identification of this specimen in summer would follow the path of these numbers in the Summer Key: — A_2, F_2, G_1, H_2, J_1, K_1. In the winter key: — A_2, B_2, C_1, D_2, E_1, F_1. Eastern Redcedar would follow these: — A_1, B_2, E_2. American holly: — A_1, B_1, C_1. Dogwood: — A_2, F_2, G_2, P_2, X_2, Y_2, Z_2, AA_1. Now try it on one you know first, then on some unknowns. It should soon be very easy to identify unknown specimens.

KEY TO TREES IN SUMMER

A1 LEAVES EVERGREEN. (Some of last year's leaves present). B

A2 LEAVES NOT EVERGREEN, falling in autumn (deciduous). F

B1 Leaves broad—not needlelike nor scalelike. C

B2 Leaves needlelike or scalelike. E

C1 At least some of the leaves with spiny margins; fruit, numerous red berries. American Holly (*Ilex opaca*). p. 99.

C2 Leaves large (6-8 inches long); no spiny margins; flowers snowy white; fruit conelike, releasing red seeds at maturity. D

C3 Leaves small (1-1½ inches long), with scalloped margins; flowers very small; fruit, red berries. Yaupon (*Illex vomitoria*). p. 101

D1 Leaves light silvery beneath. Sweet bay (*Magnolia virginiana*). p. 80.

D2 Leaves more or less brown, downy beneath. Southern Magnolia (*Magnolia grandiflora*). p. 81.

E1 Leaves from 2-18 inches long, in bundles of 2-5; fruit, a woody cone. Pine (*Pinus*). pp. 20-23.

E2 Leaves ½ inch or less, not in bundles; fruit small, berry-like, blue or purple. Cedars (*Juniperus*). pp. 25-26.

F1 Leaves about ½ inch long, flat needlelike, making the twigs appear featherlike; fruit, a globular woody cone about 1 inch in diameter, Baldcypress. (*Taxodium*). p. 24.

F2 Leaves larger, broad, flat; fruit not a woody cone. G

G1 Trees with thorns or spines. H

G2 Trees without thorns or spines. P

H1 Thorns 2-10 inches long, branched; leaves compound, once or twice pinnate; pods flat either 1-2 inches long. Water or Honeylocust (*Gleditsia*). pp. 93-94.

H2 Thorns or spines much shorter, not branched. J

J1 At least some spines in pairs at the base of the compound leaves. K

J2 Spines or thorns not in pairs at base of leaves. L

K1 Spines only in pairs at the sides of the leaf base or leaf scar. Black Locust (*Robinia*). p. 96.

K2 Spines scattered on twigs and on leaves as well as in pairs at base of leaves. Prickly Ash (*Zanthoxylum*). p. 102.

L1 Spines numerous, scattered over the very stout twigs and crowded in a ring below each leaf or leaf scar. Devils Walkingstick (*Aralia*). p. 116.

L2 Spines few, scattered about ¼ inch long, curved downward, twigs slender. Hercules-Club (*Zanthoxylum*). p. 102.

L3 Spines or thorns solitary at nodes or terminating short branches.

M1 Thorns normally one at each node. N

M2 Thorns usually terminating short branches. O

N1 Thorns straight, ½-1 inch long; leaves ovate; sap milky; fruit large, green, orange-like. Osage-orange (*Maclura*). p. 77.

N2 Thorns straight or curved, 1-3 inches long, sap not milky, fruit like a small apple, red, orange or blue. Hawthorns (*Crataegus*). p. 91.

O1 Leaves with entire margins, broadest above the middle; underside and young twigs more or less tawny hairy. Gum Bumelia (*Bumelia*). p. 123.

O2 Leaves finely toothed, broadest near the middle; leaves and twigs not hairy. American Plum (*Prunus americanus*). p. 89.

O3 Leaf margins irregularly toothed, broadest below the middle; underside and young twigs often covered with pale hairs; fruit a small green aromatic apple. Wild Crabapple (*Malus*). p. 90.

P1 Leaves compound (blade in more than one part). Q

P2 Leaves simple (blade all in one piece). X

Q1 Leaves palmately compound, leaflets 5 or more from the end of the leaf stalk; twigs brown or gray. Buckeye (*Aesculus*). pp. 109, 110.

Q2 Leaves pinnately compound. R

R1 Leaves opposite (2 at each node). S

R2 Leaves alternate (1 at each node). T

S1 Leaflets 3-7; twigs green or purplish. Boxelder (*Acer negundo*). p. 108.

S2 Leaflets 5-9; twigs gray to brown. Ash (*Fraxinus*). pp. 125-129.

T1 Leaves doubly compound. U

T2 Leaves only once pinnate. V

U1 Twigs stout, pith large, salmon color; leaflets ovate, smooth margins; fruit large woody legumes. Kentucky Coffeetree (*Gymnocladus*). p. 97.

U2 Twigs more slender, pith white. Ua

Ua1 Leaflets small, elliptical or oblong, with usually smooth margins; fruit a legume about 1½ or 12-15 inches long and 1 inch wide. Honeylocust or Waterlocust (*Gleditsia*). p. 93, 94.

Ua2 Leaflets 1-2 inches long, ovate, variously toothed; fruit a cluster of yellow berries. Chinaberry. (*Melia*). p. 104.

Ua3 Leaflets very numerous, small, about 3/8 inch long, lower half of each wider than upper half; leaves even-pinnate; flowers in axillary, peduncled globular heads, like pink fluffy "pompoms"; fruit a legume about 3 inches long. Silk Tree, "Mimosa", (*Albizia*). p. 95.

V1 Fruit a large nut. W

V2 Fruit a small pod. Black Locust (*Robinia*). p. 96.

V3 Fruit a cluster of yellow berries. Soapberry. (*Sapindus*). p. 111.

V4 Fruit a showy cluster of narrow, curled, winged fruits about 1½-2 inches long; leaflets 15-45 with one or two large, green, gland-tipped teeth near base. Ailanthus (*Ailanthus*). p. 103.

V5 Fruit a small flat pod; leaflets alternate—not in pairs; leaf base covering axillary bud. Yellow-wood (*Cladrastis*). p. 98.

V6 Flowers, small, yellow, in terminal panicles; Fruit a papery, three-sided capsule, with about three round seeds. Goldenraintree, (*Koelreuteria*). p. 112.

W1 Pith of twigs brown, broken into separated plates; fruit husk not splitting at maturity. Walnuts (*Juglans*). pp. 32, 33.

W2 Pith of twigs white, continuous; fruit husks splitting into 4 parts. Hickories, Pecan (*Carya*). pp. 34-41.

X_1 Leaves whorled, 3 at each node; flowers white; fruit a long slender pod. Catalpa (*Catalpa*). p. 131.

X_2 Leaves opposite, 2 at each node. Y

X_3 Leaves alternate, only one at each node. CC

Y^1 Leaves palmately lobed. Maples (*Acer*). pp. 105-107.

Y_2 Leaves not lobed. Z

Z_1 Leaves long-stalked, large, 6-12 inches long, ovate; clusters of yellow flower buds, large lavender flowers or ovate pods evident. Royal Paulownia (*Paulownia*). p. 132.

Z_2 Leaves short-stalked, usually not more than 6 inches long. AA

AA_1 Twigs green or tinged with red. Flowering Dogwood (*Cornus*). p. 117.

AA_2 Twigs gray or brownish. BB

BB_1 Leaves usually glossy; undersides of young leaves, petioles, or winter buds with fine rusty brown scales. Rusty Blackhaw (*Viburnum*). p. 133.

BB_2 Leaves often glossy above, smooth, green beneath, about 6 inches long; Flowers, white, in drooping axillary clusters; fruit, small plum-like, dark blue. Fringetree. (*Chionanthus*). p. 130.

BB_3 Leaves usually dull, no rusty brown scales; leaves tapering to both ends. Swamp-Privet (*Forestiera*). p. 124.

CC_1 Leaves fan-shaped, often deeply notched at outer end; veins, forked, (dichotomous). Ginkgo, (*Ginkgo*). p. 27.

CC_2 Leaves palmately veined, i.e., with 3 or more prominent veins arising at base of leaf. DD

CC^3 Leaves pinnately veined (with one one prominent vein arising at base, others from the sides of this midvein). HH

DD_1 Leaves not lobed. EE

DD_2 Leaves lobed. GG

EE_1 Leaves usually much longer than broad, quite uneven at base. Hackberry, Sugarberry (*Celtis*). pp. 73, 74.

EE_2 Leaves about as long as broad. FF

FF^1 Leaves heart-shaped with entire margins. Redbud (*Cercis*). p. 92.

FF_2 Leaves heart-shaped with toothed margins, often with one or two lateral lobes; juice milky. Mulberry (*Morus*). p. 75.

FF_3 Leaves heart-shaped with toothed margins, not lobed; sap not milky. Basswoods (*Tilia*). p. 114.

GG_1 Leaves 5-lobed, star shaped, margins finely toothed. Sweetgum (*Liquidambar*). p. 85.

GG_2 Leaves with 3 major lobes, margin coarsely and irregularly toothed. Sycamore. (*Platanus*). p. 86.

GG_3 Leaves irregularly lobed, 1 or 2 lateral lobes, or unlobed; margins toothed; sap milky. Mulberry (*Morus*). p. 75.

GG_4 Leaves similarly lobed, but both surfaces, petiole and twigs densely covered with fine gray hairs. Paper Mulberry, (*Broussonetia*). p. 76.

GG_5 Leaves large, smooth, generally rounded, with 3 or 5 large pointed lobes; bark of tree grayish green. Chinese Parasol-tree. (*Firmiana*). p. 115.

HH_1 Leaves appearing cut off at the end; leaving normally 4 lobes. Tuliptree (*Liriodendron*). p. 82.

HH_2 Leaves otherwise. JJ

JJ_1 Several buds crowded at tip of twigs; fruit an "acorn". Oaks (*Quercus*). pp. 47-66.

JJ$_2$ Usually only 1 bud at tip; fruit not an acorn. KK

JJ$_3$ Terminal bud absent, leaves dull green, 1"-2" long; blunt or short pointed; flowers, short, bell shaped white; fruit dark blue berries. Tree Sparkleberry (*Vaccinium*). p. 120.

KK$_1$ Leaf margins smooth, without teeth or lobes. LL

KK$_2$ Leaf margins smooth, some leaves unlobed, others with one or two lateral lobes, aromatic. Sassafras (*Sassafras*). p. 84.

KK$_3$ Leaf margins smooth, but with a few irregular points or teeth. Water Tupelo (*Nyssa*). p. 119.

KK$_4$ Leaf margins more or less regularly toothed. OO

LL$_1$ Buds covered with a cap (2 stipules) which leaves a scar around the twig at each node. Magnolia, Cucumber Tree (*Magnolia*). pp. 78-81.

LL$_2$ Bud scales not leaving circular scars at each leaf or node. MM

MM$_1$ Leaves about 8 inches long, broader above the middle; buds soft velvety brown, not scaly. Pawpaw (*Asimina*). p. 83.

MM$_2$ Leaves usually smaller, buds scaly. NN

NN$_1$ Leaves and twigs smooth, not hairy. Blackgum (*Nyssa*). p. 118.

NN$_2$ Leaves (underside) and twigs usually soft and downy. Persimmon (*Diospyros*). p. 121.

NN$_3$ Leaves and twigs smooth, flowers, fruits, and often leaves crowded at end of short dwarf branches; berries red. Possumhaw (*Ilex decidua*). p. 100.

OO$_1$ Marginal teeth with smaller teeth on them (*doubly serrate*). PP

OO$_2$ Marginal teeth simple without secondary teeth. RR

PP$_1$ Leaves usually very unequal at base; fruit. flat, disc-shaped, with seed in center. Elm. (*Ulmus*). pp. 67-71.

PP$_2$ Leaves nearly even at base; fruit of several small smooth nutlets in a small conelike cluster. QQ

QQ$_1$ Fruit hoplike, nutlets enclosed in inflated sacs; bark in loose narrow flakes. Hophornbeam (*Ostrya*). p. 43.

QQ$_2$ Fruit consisting of several 3-lobed bracts with a nutlet on each; bark smooth, gray, fluted, "muscle-like". American Hornbeam. (*Carpinus*). p. 42.

QQ$_3$ Fruit consisting of a compact, soft cone; bark peeling off in thin papery sheets. Birch (*Betula*). p. 44.

RR$_1$ Teeth about ¼ inch long; leaves from 4 to 8 inches long, about 1/3 as wide, widest in the middle tapering to both ends; fruit a nut in a very spiny bur. Chinkapin (*Castanea*). p. 46.

RR$_2$ Teeth shorter; leaves and fruit otherwise. SS

SS$_1$ Winter buds 4 times as long as thick, or longer. TT

SS$_2$ Winter buds not 4 times as long as thick. UU

TT$_1$ Winter buds golden brown, straight, consisting of many scales. Beech (*Fagus*). p. 45.

TT$_2$ Winter buds greenish to gray brown, somewhat curved, scales only a few. Serviceberry (*Amelanchier*). p. 87.

UU$_1$ Leaves more or less triangular with long stalks (petioles). Cottonwood (*Populus*). pp. 28-30.

UU$_2$ Leaves not triangular, stalks short. VV

VV$_1$ Leaves long, narrow, finely toothed, short stalked; buds covered by a single scale. Willow (*Salix*). p. 31.

VV2 Leaves oval or oblong, teeth fine with incurved tips; small round glands on petiole at base of blade; bark bitter and ill-smelling; buds scaly. Black Cherry (*Prunus*). p. 88.

VV3 Leaves oval or oblong, teeth obscure, no leaf glands; bark not ill-smelling; buds not scaly, downy. Carolina Buckthorn (*Rhamnus*). p. 113.

VV4 Leaves ovate, acuminate, about 6 inches long on a 1-inch petiole; marginal teeth, obscure; buds, brown and scaly; twigs light brown to gray-brown; fruits 4-winged, about 1-inch long. Silverbell, (*Halesia*). p. 122.

KEY TO TREES IN WINTER

A1 LEAVES EVERGREEN—See Summer key.

A2 LEAVES DECIDUOUS (falling off in autumn). B

B1 Leaves falling off with small twigs in featherlike clusters; either globular, 1-inch cones or drooping clusters of small, round flowerbuds evident; if growing in water, base of trunk thickened and roots producing "knees". Baldcypress (*Taxodium*). p. 24.

B2 Features otherwise. C

C1 Thorns or spines present on twigs or trunks. D

C2 No thorns or spines present. L

D1 Thorns 2 inches or longer, branched. Honey or Water-locust (*Gleditsia*). pp. 93, 94.

D2 Thorns or spines not branched, usually shorter. E

E1 At least some spines in pairs at the nodes (leaf scars). F

E2 Spines or thorns not in pairs at nodes. G

F1 Spines only in pairs at the nodes. Black Locust (*Robinia*). p. 96.

F2 Spines scattered on twigs as well as in pairs at nodes. Prickly Ash (*Zanthoxylum*). p. 102.

G1 Spines numerous, crowded into a ring below the leaf scars around very stout twigs and also scattered between the scars. Devils-Walkingstick (*Aralia*). p. 116.

G2 Spines short, curved, few, not crowded; twigs slender. Hercules-Club (*Zanthoxylum*). p. 102.

G3 Spines or thorns solitary at nodes, or terminating short branches. H

H1 Thorns usually 1 at each node. J

H2 Thorns usually terminating short branches. K

J1 Thorns straight, ½ to 1 inch long; sap milky; fruit green or yellowish, orange-like. Osage-orange (*Maclura*). p. 77.

J2 Thorns straight, ½-inch long, but some short branches also ending in thorns; fruit small, round, black berry; young twigs more or less wooly. Gum Bumelia (*Bumelia*). p. 123.

J3 Thorns usually 1-3 inches long, slender, straight or slightly curved; fruit small, apple-like, red, orange, or blue. Hawthorns (*Crataegus*). p. 91.

K1 Twigs and buds usually smooth; fruit a small plum, bark brown or black. Plum (*Prunus*). p. 89.

K2 Twigs and buds usually soft, downy; fruit a green, aromatic apple, 1 to 1¼ inches in diameter. Wild Crabapple (*Malus*). p. 90.

L1 Leaf scars large, oval or circular, 3 at each node. Catalpa (*Catalpa*). p. 131.

L_2 Leaf scars and buds opposite, 2 at each node. M

L_3 Leaf scars and buds alternate (only 1 at each node). R

M_1 Twigs relatively thick, about ¼-inch or more in diameter. N

M_2 Twigs relatively slender, less than ¼-inch in diameter. P

N_1 Leaf scars nearly circular, flattened on top; pith with alternate plates and cavities; usually with open clusters of next year's yellow-brown flower buds, and oval pods of past season. Royal Paulownia (*Paulownia*). p. 132.

N_2 Leaf scars not nearly circular; pith solid. O

O_1 Winter buds large, showing 6 or more pairs of thin bud scales. Buckeye (*Aesculus*). pp. 109, 110.

O_2 Winter buds smaller, showing only 2 or 3 pairs of thicker scales. Ash (*Fraxinus*). pp. 125-129.

P_1 Leaf scars narrow, usually meeting around the twig. Q

P_2 Leaf scars very small, rounded; twigs very slender; winter buds only about 1/16-inch long. Swamp-Privet (*Forestiera*). p. 124.

P_3 Leaf-scars small, shield-shaped; winter buds short rounded. Fringetree, (*Chionanthus*). p. 130.

Q_1 Winter buds of two kinds—circular (flattened from the top) flower buds, and short, slender, branch buds of about 2 pairs of erect scales (not overlapping). Dogwood (*Cornus*). p. 117.

Q_2 Winter buds not as in Q_1, all covered by 4 or more pairs of overlapping scale. Maples (*Acer*). pp. 105-108.

Q_3 Winter buds usually covered by only 1 pair of visible bud scales; reddish brown. Blackhaw (*Viburnum*). p. 133.

R_1 Several buds crowded at tip of twig; pith usually 5-angled. Oaks (Quercus). pp. 47-66.

R_2 Buds not crowded at twig tips. S

S_1 Scar left by stipules encircling twig at each node. T

S_2 No scar encircling twigs at each node. V

T_1 Buds surrounded by leaf scar; bark of large branches white. Sycamore (*Platanus*). p. 86.

T_2 Buds not surrounded by leaf scars. U

U^1 Buds long, tapering. Magnolias (*Magnolia*). pp. 78-81.

U_2 Buds shorter, somewhat flattened. Tuliptree (*Liriodendron*). p. 82.

V^1 Buds evidently covered by a single scale. Willow (*Salix*). p. 31.

V_2 Evident bud scales, 2 or 3. W

V^3 Bud scales more than 3. X

V_4 Buds without overlapping scales, but composed of tiny, parallel, rudimentary leaves (valvate). PP

V_5 Buds soft downy without evident scales, twigs smooth, thick ½-inch or more; leaf scars large, shield-shaped. Ailanthus (*Ailanthus*). p. 103.

W_1 Buds smooth, oval, reddish-purple; twigs smooth, reddish. Basswoods (*Tilia*). p. 114.

W_2 Buds smooth, pointed, slightly flattened dorsally, green-brown. Silverbell, (*Halesia*). p. 122.

W_3 Buds dark, and more or less hairy; twigs short, hairy, dull gray. Persimmon (*Diospyros*). p. 121.

W4 Buds dark gray, short pointed, above prominent 3-lobed leaf scars. Many small round dark lenticels on twigs. Golden-raintree. (*Koelreuteria*). p. 112.

W5 Buds dark brown, very small, rounded, above prominent 3-lobed leaf scars; light-colored lenticels prominent on greenish twigs. Silktree, (*Albizia*). p. 95.

X1 Definite terminal bud evident. Y

X2 No actual terminal bud present, pseudo-terminal bud in end position. (Look for scar of terminal bud on side of twig opposite from last leaf scar.) Lateral buds evident. GG

X3 No actual terminal bud present; lateral buds not evident because concealed by corky membrane in leaf scar. QQ

Y1 Terminal bud slender, more than 3 times as long as thick. Z

Y2 Terminal buds shorter, not more than twice as long as thick. AA

Z1 Buds golden brown, straight, scales 15 or more. Beech (*Fagus*). p. 45.

Z2 Buds gray brown or greenish, somewhat curved, scales less than 10. Serviceberry (*Amelanchier*). p. 87.

AA1 Central pith of twigs more or less 5-angled in cross section. BB

AA2 Central pith not 5-angled. CC

BB1 Twigs and branches often bearing corky ridges; fruits globular, many pointed. Sweetgum (*Liquidambar*). p. 85.

BB2 Twigs and fruits otherwise; buds often resinous-covered. Cottonwood (*Populus*). pp. 28-30.

CC1 Pith brown, with alternate plates and cavities. Walnuts (*Juglans*). pp. 32-33.

CC2 Pith white, continuous. DD

DD1 Twigs, when cut or scraped, fragrant or with strong odor. EE

DD2 Twigs without noticeable odor. FF

EE1 Twigs greenish, pleasantly fragrant. Sassafras (*Sassafras*). p. 84.

EE2 Twigs brown, odor unpleasant. Black Cherry (*Prunus*). p. 88.

FF1 Terminal buds large (½ inch or more long); scales broad, overlapping; fruit a large nut. Hickory (*Carya*). pp. 34-41.

FF2 Terminal buds not over ¼ inch long; fruit blue berries on slender stalks. Blackgum or Tupelo (*Nyssa*). pp. 118, 119.

FF3 Terminal bud, short, rounded; leafscars showing two bundle scars. Ginkgo, (*Ginkgo*). p. 27.

GG1 Bark of larger branches and trunk peeling off in large, papery-thin sheets. Birch (*Betula*). p. 44.

GG2 Bark of larger branches and trunk loosening in thin but narrow strips; catkins evident. Hophornbeam (*Ostrya*). p. 43.

GG3 Bark of major branches relatively smooth, light gray. HH

GG4 Bark not as in GG1, GG2, GG3. KK

HH1 Trunk and major branches not circular in cross section but more or less fluted, "muscular". American Hornbeam (*Carpinus*). p. 42.

HH2 Trunk and branches circular in cross section. JJ

JJ1 Bark marked with few or many warty projections. Hackberry or Sugarberry (*Celtis*). pp. 73, 74.

JJ2 Bark smooth; twigs rich brown; leaf scar encircling the velvety brown bud. Yellowwood (*Cladrastis*). p. 98.

KK1 Bark tight, forming firm, large plates; twigs thick, pith large, salmon red. Kentucky Coffeetree (*Gymnocladus*). p. 97.

KK2 Bark relatively loose and flaky; twigs thin. LL

LL1 Buds small, about 1/8-inch long, rounded. MM

LL2 Buds sharp-pointed even when plump; more than 1/8-inch long. NN

MM1 Buds solitary at nodes; twigs gray-brown; bark in loose flakes. Planertree (*Planera*). p. 72.

MM2 Buds often several at each node and often found on older branches; twigs dark red-brown; bark in dark loose plates, showing red-brown underbark. Redbud (*Cercis*). p. 92.

NN1 Twigs greenish or yellowish brown; sap milky. Mulberry (*Morus*). p. 75.

NN2 Twigs gray, velvety; sap milky. Paper Mulberry, (*Broussonetia*). p. 76.

NN3 Twigs otherwise; sap not milky. OO

OO1 Twigs gray or reddish-gray; pith angled. Chinkapin (*Castanea*). p. 46.

OO2 Twigs brown or gray-brown; pith not angled. Elms (*Ulmus*). pp. 67-71.

PP1 Buds chocolate brown, velvety. Pawpaw (*Asimina*). p. 83.

PP2 Buds light tan; leaf scars small; fruit black berry, usually with three large seeds. Carolina Buckthorn (*Rhamnus*). p. 113.

PP3 Buds yellow or yellowish-brown; leaf scars large, 3-lobed; fruit a small rounded nut. Bitternut (*Carya*). p. 37.

PP4 Buds gray brown; leaf scars much as in bitternut; fruit an angular, flattened, or smooth brown nut. Water Hickory or Pecan (*Carya*). pp. 34, 35.

QQ1 Bark black or very dark gray, twigs usually brown. Honey or Waterlocust (*Gleditsia*). pp. 93, 94.

QQ2 Bark lighter gray, rough, twigs gray or gray-brown. Black Locust (*Robinia*). p. 96.

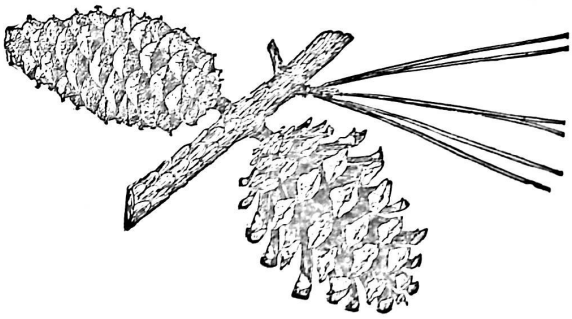
Shortleaf Pine

(*Pinus echinata* Mill.)

Local Names: Yellow, Southern Yellow, Old Field, Arkansas Soft Pine

Description

Tree may reach height of 120 feet in 60-100 years; is relatively fast growing in favorable conditions; may reach an age of 250 years. **Branching:** Numerous branches when grown in the open, but straight and slender with branches only near the top when crowded. **Bark** reddish brown, broken into rectangular plates, about an inch (more or less) in thickness, thinner than loblolly bark; on older trees "pitch pockets" present. **Leaves** about 3-5 inches long, in clusters of 2 or often 3, slender and flexible, more yellowish green than loblolly. **Flowers** of two kinds: male (staminate) in early spring, cone-like, about 1 inch long, in clusters at the tip of the preceding year's growth; female (ovulate), green or red, on the new year's growth. **Cones** woody, about 2 inches long, with a small sharp prickle on each scale; often remain on the twigs for 3 or 4 years. **Wood:** Heartwood orange brown, sapwood yellowish, annual rings and resin ducts distinct, rays indistinct; dry weight 38 pounds per cubic foot.



One-half natural size.

Key Characteristics

Needles and cones shorter than those of loblolly pine; color of needles more yellow green.

Uses

Very useful for general construction, interior finish, vehicles, agricultural implements, crates, sashes, and doors.

Distribution

ARKANSAS: In nearly all parts of state except overflow land; in the mountains, on exposed places. ELSEWHERE: From eastern Texas and Oklahoma to southeastern New York.

Largest Specimens on Record

ARKANSAS: Circumference 10 feet 5 inches, height 124 feet, spread 36 feet. Near Rea Valley, Marion County. ELSEWHERE: Circumference 13 feet 10 inches, height 127 feet, spread 50 feet. Near Sandy Creek, Texas.

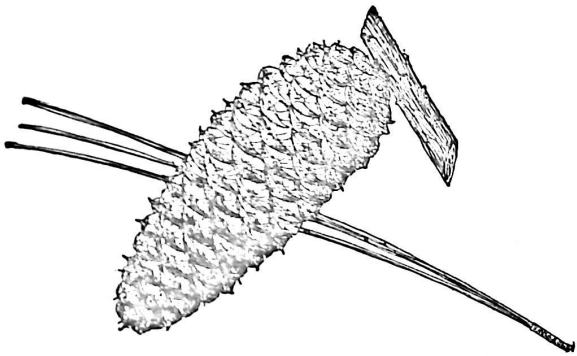
Loblolly Pine

(*Pinus taeda* L.)

Local names: Old Field, Yellow, Southern Yellow, Arkansas Soft, Longleaf Pine. (Not to be confused with *Pinus palustris*, the longleaf pine of the Gulf region).

Description

Tree reaches height of 130 feet or more and a diameter of 50 inches or more; attains an age of 300 years under favorable circumstances. **Branching:** Like the shortleaf pine, when it grows in open situations it remains very limby and short and is called "bull pine." **Bark** dark in color on young trees, becoming bright red brown on old trees; often attains a thickness of as much as 2 inches; is deeply furrowed. **Leaves** slender, stiff, slightly twisted, 5-9 inches long, light blue green in color, and three in cluster (sometimes only two.) **Flowers** similar to those of the shortleaf pine. **Cones** from 3-6 inches long. The difference in cone size is one of the best means of distinguishing the tree from the smaller-coned shortleaf pine. **Wood:** Heartwood orange brown, sapwood light yellow; annual rings distinct, no pores, rays indistinct, resin ducts present but usually indistinct; dry weight variable, but usually about the same as shortleaf pine (38 pounds per cubic foot.)



One-half natural size.

Key Characteristics

Leaves 2 or 3 in a cluster, usually 3, more bluish green. Cones longer, sessile, and armed with short stout prickles. Bark dark on young trees, becoming bright red brown on old trees. The spring "candle" or shoot is grayish green, slender, and often curved or drooping instead of erect.

Uses

General construction, interior and exterior finish, posts, poles, pulp, flooring, sashes, doors, boxes, crating, and fuel.

Distribution

ARKANSAS: From the Louisiana line north to the foothills of the Ouachita Mountains in the central part of the state, and sparingly in the northeastern part east of the mountains and west of the Mississippi overflow area. Not adapted to steep slopes where the shortleaf pine can grow. ELSEWHERE: Range similar to that of the shortleaf, but not as far north.

Largest Specimens on Record

ARKANSAS: Circumference 15 feet 8 inches, dbh. 57.5 inches, height 147 feet, spread 63 feet. Cleveland County. ELSEWHERE: Circumference 14 feet 1 inch, height 155 feet, spread 72 feet. Near Urania, Louisiana.

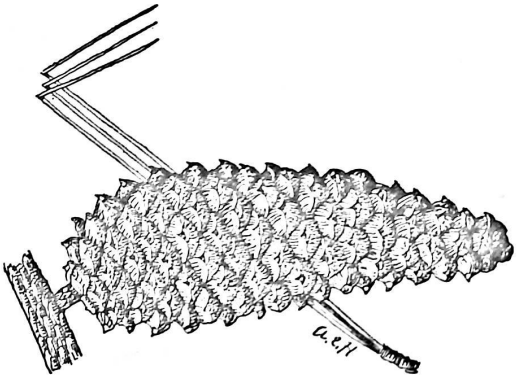
Longleaf Pine

(*Pinus palustris* Mill.)

Local name: Southern Pine

Description

Tree tall and slender, usually with an irregular head. **Branching** irregular and often gnarled; buds with silvery white and lustrous scales ending in long threads, giving a cobwebby effect. **Bark** thin, light orange brown; forming large, close, papery scales. **Leaves** in threes, 8-18 inches long, slender, drooping. **Flowers:** Male in short, dense clusters deep rose purple appearing before new leaves; female near the end of the new growth dark purple. **Cones** slender conic, slightly curved, averaging 8 inches long; scales dull brown with small, reflexed prickles. **Wood** moderately heavy (41 pounds per cubic foot), very hard and durable, light red or orange with almost white sapwood.



One-half natural size.

Key Characteristics

Buds white. Leaves three in each bundle, much longer than any of our other pines averaging 12 inches, crowded towards the ends of the branches. Cones slender, about 8 inches long.

Uses

Wood very valuable for general construction, masts, spars, bridges, flooring, interior finishing; a principal source of naval stores.

Distribution

ARKANSAS: Only as introduced for trial in reforestation. ELSEWHERE: Coastal plain from Virginia to Florida, west to eastern Texas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 9 feet 4 inches, height 134 feet, spread 34 feet. Hemphill, Texas.

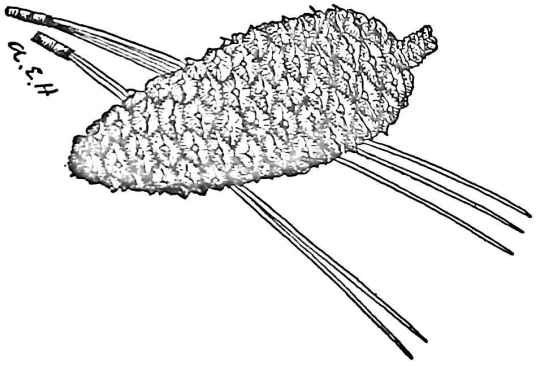
Slash Pine

(*Pinus elliottii* Engelm.)

Local Name: Swamp Pine, Southern Pine

Description

Tree up to 100 feet tall with a diameter of 2-3 feet. **Branching:** Heavy horizontal branches produce a well-shaped tree. **Bark** medium thick, forming large, dark colored scales. **Leaves** in twos or threes, stout, about 10 inches long, dark green. **Flowers** early, before the new leaves; male in short, compact clusters, deep purple; female pink, on long stalks. **Cones** ovoid, 2-6 inches long; scales thin and flexible, bearing very small curved prickles, turning rich dark brown. **Wood** heavy (48 pounds per cubic foot), very hard, strong, durable; coarse-grained; dark orange brown with much lighter sapwood.



One-half natural size.

Key Characteristics

The medium long needles and thin-scaled cones with very small prickles help distinguish this from other pines.

Uses

General construction, railroad ties; one of the chief sources of naval stores.

Distribution

ARKANSAS: Introduced for trial in reforestation of various areas in the state. ELSEWHERE: South Carolina to Florida and Louisiana.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 8 feet 7 inches, height 150 feet, spread 60 feet. Colleton County, S. C.

Eastern Cottonwood

(*Populus deltoides* Bartr.)

(Synonym *Populus deltoides* var. *virginiana* (Foug.) Sudw.)

Local Names: Southern Cottonwood, Eastern Poplar

Description

Tree will often make thick, pure stands on new sand bars and islands; apparent intolerance of shade keeps it out of thick, old stands of typical river-bottom forests. Rapid growing with a relatively short life; may attain a height of 100 feet and a diameter of 6 feet or more. In favorable situations on wet soil makes satisfactory, quick-growing tree; like other poplars undesirable for street planting in cities because roots tend to clog sewer pipes. **Branches** easily broken by wind or heavy sleet. **Bark** on twigs light yellow or green, on old trees very thick and deeply furrowed and ridged. **Leaves** alternate, 3-5 inches long, triangular in shape, coursely toothed on the edges, supported by flattened, slender petioles. **Flowers** pendulous catkins, of two kinds, appearing before the leaves. **Fruit** conical capsules, ¼ to ½ inch long, several on a stalk. Seeds light brown, each with a cluster of white, cottony hairs, giving the tree its name. **Wood** dark brown, soft, and light (29 pounds per cubic foot), warping badly and hard to season.

Leaf, one-half natural size.
Twig, one-third natural size.

Key Characteristics

Brown pods with clusters of white, cottony hairs. Alternate leaves, 3-5 inches long, triangular-shaped, and coarsely toothed, with flat leaf stalks. Drooping catkins. Buds usually coated with a sticky resin.

Uses

Valuable for lumber and veneer.

Distribution

ARKANSAS: Found sparingly in well-drained sandy soil of stream valleys in western two-thirds of state; common in some situations in Mississippi floodplains. Along the Arkansas and Red rivers in the western half of the state may be the only tree, or associated with willows, on islands or at immediate river bank. ELSEWHERE: From Quebec and Lake Champlain south through western New England to northern Florida, west to middle Texas, and north through Oklahoma, eastern Nebraska, and Kansas to the Dakotas.

Largest Specimens on Record

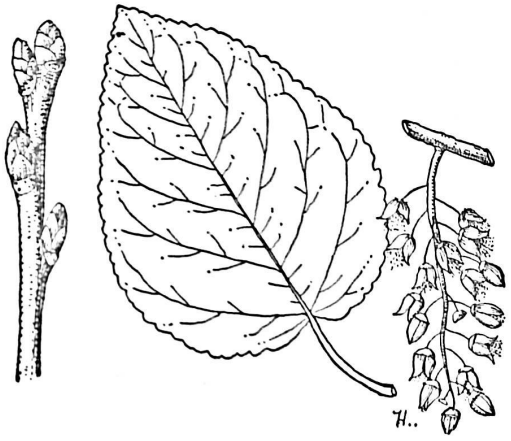
ARKANSAS: Circumference 18 feet 4 inches, dbh. 70.1 inches, height 105 feet, spread 95 feet. West River Road, North Little Rock. ELSEWHERE: Circumference 30 feet 3 inches, height 118 feet, spread 100 feet. Near Perry, Iowa.

Swamp Cottonwood
(*Populus heterophylla* L.)

Local Name: Swamp Poplar

Description

Tree fast-growing in wet situation, to which it is almost wholly confined; may attain height of 90 feet and diameter of 3 feet. More tolerant of shade than the other cottonwood and may be found associated with water oak, water hickory, water tupelo and baldcypress. **Bark** light greenish yellow on young trunks, light brown tinged with red on old; becoming broken into long, narrow plates attached only at the middle. **Leaves** larger than eastern cottonwood, 5-7 inches long, with rounded base and tip; usually toothed along edges; dark green above and pale beneath; leaf stalks rounded. **Flowers** similar to eastern cottonwood. **Fruit** dark red brown, egg-shaped, 2- to 3-celled capsules about ½ inch long. Seeds have a cotton-like outgrowth that enables them to be carried long distances by the wind. **Wood:** Heartwood brownish or grayish; annual rings distinct, rays indistinct, pores indistinct and scattered; weight very light to light, texture coarse.



Leaf, one-half natural size.
Twig, three-quarters natural size.

Key Characteristics

Large, heart-shaped leaves with round leaf stalks or petioles; the only southern poplar with round petioles.

Uses

Boxes, crates, pulp, plywood, excelsior, low-grade lumber, toys, woodenware, and novelties.

Distribution

ARKANSAS: Most common in Mississippi delta region; occurs sparingly in valleys of the larger rivers; essentially a tree of the swamps. UNITED STATES: More a tree of the south than the eastern cottonwood. Occurs in Atlantic coastal region from Connecticut to northern Florida; across southern Georgia and Alabama; throughout Mississippi, Louisiana, southeastern Arkansas, southeastern Missouri, and southern Illinois and Indiana.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 16 feet 4 inches, height 130 feet, spread 120 feet. Richland County, S. C.

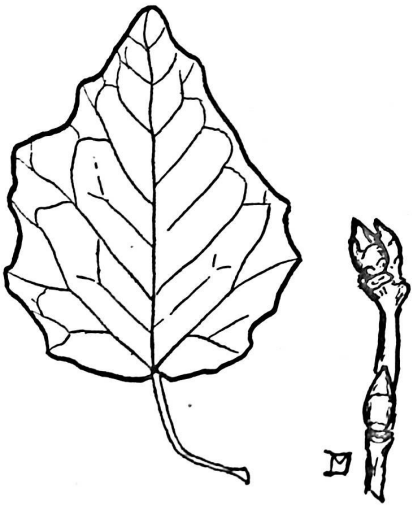
White Poplar

(*Populus alba* L.)

Local Names: Silver-leaved poplar, (erroneously, Silver-leaf "Maple.")

Description

Tree of rapid growth up to 100 feet with spreading branches; **Bark** smooth, grayish-white, becoming rough and dark. **Twigs** and **Winter Buds** at first white downy becoming smooth. **Leaves** ovate, with several blunt teeth or short lobes, ranging in length from two to four inches and nearly as wide at first densely white-felted beneath, but becoming white and smooth, showing white in the wind; alternate on the stems. **Flowers** in short catkins before the leaves (as in most poplars). **Fruits,** clusters of small capsules.



Key Characteristics

Blue-green, irregularly blunt-toothed leaves showing white in the wind; smooth gray-white bark.

Uses

Planted for ornament and shade, spreading from suckers, and often becoming a nuisance.

Distribution

Native of Europe, widely planted for ornament and escaped.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

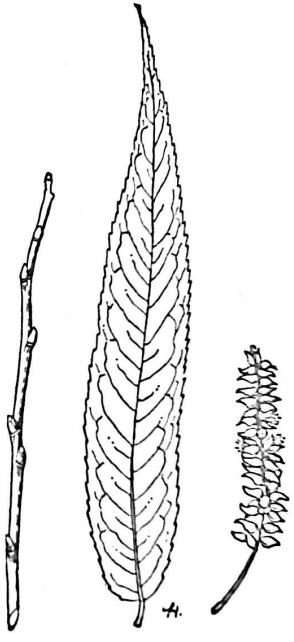
Black Willow

(*Salix nigra* Marsh.)

Local Names: Swamp and River Willow

Description

Tree fast-growing and, like the cottonwood, a pioneer tree of stream edges, sandbars, and islands; maximum height about 50 feet, although a variety (var. *altissima* Sarg.), found in Arkansas, may reach 100 feet. **Bark** deeply divided into broad, flat ridges that separate into thick, plate-like scales; becomes very shaggy on old trees. **Leaves** 3-6 inches long, usually less than ½ inch wide; tips tapered, and entire margins finely toothed; bright green on both sides, turning pale yellow in autumn. **Flowers** in drooping catkins give the trees a yellow appearance before the leaves develop. **Fruit** spindle-shaped, ¼ inch long; many arranged on the stalk. Seeds very small, each furnished with long, silky down. **Wood** soft, light (26 pounds per cubic foot), and neither strong nor durable.



Two-thirds natural size.

Key Characteristics

Long, narrow, tapering leaves with finely toothed margins, bright yellow green and shiny on both sides.

Uses

Boxes, crates, furniture, woodenware, excelsior, slack cooperage, toys, artificial limbs, baseball bats and veneer. The tree is valuable for pollen, considerable honey being reported from willows.

Distribution

ARKANSAS: Probably occurs in stream valleys throughout the state. ELSEWHERE: From southern New Brunswick through Quebec and Ontario to Georgia and central Alabama, west to western Texas, north through eastern Oklahoma to southeastern North Dakota.

Largest Specimens on Record

ARKANSAS: Circumference 12 feet 1 inch, height 70 feet, spread 73 feet. Sevier County. ELSEWHERE: Records not available.

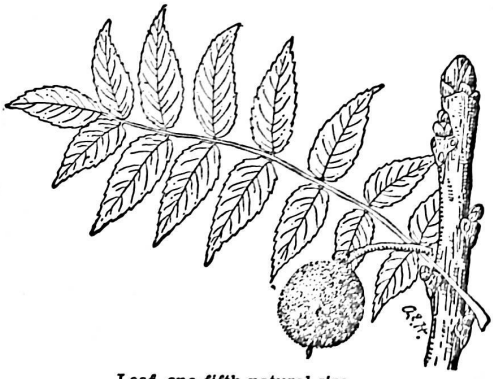
Black Walnut

(*Juglans nigra* L.)

Local Names: Walnut, American Walnut, Gunwood

Description

Tree: In forest, 100 feet tall, 4 feet in diameter, with large, gradually spreading branches; open-grown trees shorter, with a broader crown. **Bark** dark reddish brown with conspicuous netted ridges. **Leaves** compound (15-23 leaflets on same stalk), 1-2 feet long, usually yellowish-green in color; leaflets about 3 inches long, extremely tapering at the end, toothed along the margin. **Flowers** of two kinds, borne on the same tree; male flowers on 3-inch-long catkins; female, small, without petals, greenish, at the ends of new twigs. **Fruit** borne singly or in pairs with rough, green husk enclosing a very hard, firmly ridged shell containing the edible kernel. **Wood** very valuable; heartwood dark brown; annual rings distinct, rays indistinct, pores indistinct and scattered; weight medium (39 pounds per cubic foot.)



Leaf, one-fifth natural size.
Twig, three-quarters natural size.

Key Characteristics

Pith light brown in alternate plates and cavities, leaves with 15-23 leaflets; husk of fruit indehiscent, nut deeply sculptured. Winter end-bud is ovate, slightly flattened, somewhat rounded at the tip, about 1/3 inch long, covered with very fine, short, silky hairs; this distinguishes the tree from the butternut which has buds ½ to ¾ inch long.

Uses

Furniture, cabinet work, interior finish, veneers, gun stocks, caskets, pianos, shipbuilding and ornamentals. The nuts are a valuable product.

Distribution

ARKANSAS: Not extremely common in south but occurs widely in the mountainous parts of the state. At its best in good soil on north slopes and in ravines, gullies, and floodplains of small streams; found on the higher, better drained terraces of the Mississippi River delta. ELSEWHERE: Extends from southern Ontario south to northern Florida, west to eastern Texas, and north through eastern Oklahoma and eastern Nebraska to southern Minnesota.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Butternut

(*Juglans cinerea* L.)

Local Names: White Walnut, American White Walnut

Description

Tree similar to black walnut in size and habit of growth, but seldom makes as large a tree. **Bark:** Instead of being dark reddish brown and conspicuously narrow-ridged is usually light gray; the ridges are fissured but are broad and flattened. **Leaves** resemble those of the walnut, being 15-30 inches long, each with 11-17 sharp-pointed, oblong, finely toothed leaflets which are 2-5 inches long. **Flowers** resemble those of the walnut. **Fruit** differs from the black walnut, being oblong, pointed, about 2-3 inches long instead of round, and more or less hairy and viscid. Nut has a rough, grooved shell and a very oily edible kernel. **Wood** much the same as the black walnut but lighter in both color and weight (27 pounds per cubic foot).

Leaf and Fruit, one-third natural size.

Key Characteristics

Winter end-bud flattened and oblique, rather square-ended, brownish, about ½ to ¾ inch long, covered with fine, short hairs; this distinguishes the tree from the black walnut which has buds only 1/3 inch long. As in the black walnut the pith of the twigs presents a ladder-like appearance when split lengthwise, but is dark brown in color.

Uses

Can be used much as the black walnut but because of its lighter color is less desirable.

Distribution

ARKANSAS: Not common and probably found only in the Ozark Mountain region and on Crowley's Ridge. ELSEWHERE: About the same as the black walnut except that it extends farther to the northeast (southern New Brunswick) and not as far south (to northern Mississippi and Alabama).

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 20 feet 8 inches, height 100 feet, spread 94 feet. Portland, Oregon.

Pecan

(*Carya illinoensis* (Wang.) K. Koch)
(Synonym *Hicoria pecan* (Marsh) Britton)

Local Name: Sweet Pecan

Description

Tree one of the largest hickories, attaining height of 130 feet in favorable situations. Many varieties recognized by horticulturists, differences being in the shape, size, and character of the fruit. **Bark** varies, but is usually gray and rough, hard and tight, but sometimes broken into scales; bark of the branches and younger trunks smooth, but fractures with age. **Leaves** compound (9-17 leaflets attached to the same stalk), 12-20 inches long; leaflets 4-8 inches long by about 2 inches wide, toothed on the margins and long-pointed, upper side wider than lower, giving them a curved appearance. **Flowers** of two kinds on the same tree, the male on long 3-branched catkins and the female small, green, and inconspicuous in clusters of from 3-11. **Fruit** a nut, the husk four-winged or angled, pointed, 1-2 inches long and ½-1 inch in diameter; oblong, roundish, rather thin shelled, edible. **Wood** whitish in color and very tough; heartwood brown, annual rings distinct, rays indistinct, pores in rings and fairly distinct, weight heavy (47 pounds per cubic foot.)

Fruit, one-third natural size.
Leaf, one-quarter natural size.

Key Characteristics

Leaflets 9-17. Nut thin-shelled, ovoid-oblong, cylindrical; seed sweet. Bud scales narrow. Winter end-buds ½ inch long, sharp-pointed, covered with dull yellowish brown hairs.

Uses

Important commercially for its edible nuts, and now a staple lumber species.

Distribution

ARKANSAS: Chiefly in the bottom lands of eastern and southern parts of state and in the Arkansas River valley; grows well in overflow but when planted elsewhere on flat soil makes satisfactory growth. ELSEWHERE: From southeastern Iowa southeast through southwestern Indiana, western Kentucky, and Tennessee; south to northwestern Alabama; west to middle Texas; north through Oklahoma and southeastern Kansas.

Largest Specimens on Record

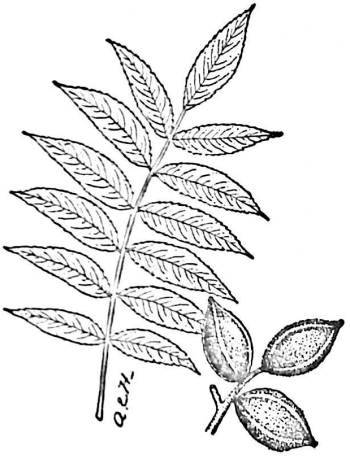
ARKANSAS: Circumference 18 feet 9 inches, height 120 feet, spread 73 feet. Near Readland. ELSEWHERE: Circumference 19 feet 7 inches, height 160 feet, spread 95 feet. Near Mer Rouge, Louisiana.

Water Hickory

(*Carya aquatica* (Michx. f.) Nutt.)
(Synonym *Hicoria aquatica* (Michx. f.) Britton)
Local Names: Bitter Pecan, Swamp Hickory

Description

Tree, growing only in very wet situations, may attain height of 90 feet or more and diameter of 2 feet. **Branching:** Lowermost branches may be drooping. **Bark** separates into loose gray-brown plates; twigs reddish brown, becoming dark gray. **Leaves** similar to those of pecan; compound with 7-13 leaflets, from 9-15 inches long; leaflets scythe-shaped, dark green and shiny above, more or less hairy beneath, thin in texture. **Flowers** like those of pecan. **Fruit** usually in clusters, 1¼ inches long and ¾ inch wide, somewhat flattened; husk angled and thin, splitting only to the middle when ripe. Husk has large cavities filled with dark red, bitter powder. Nut four-angled, flattened, usually roughened; kernel usually very bitter. **Wood** moderately heavy (43 pounds per cubic foot); softer and more brittle than other hickories; close-grained and dark reddish brown in color.



Fruit and Twig, two-thirds natural size.
Leaf, one-quarter natural size.

Key Characteristics

Winter end-buds slightly flattened, ¼ inch long, somewhat pointed, dark reddish brown, covered with yellow dots (glands). Twigs reddish brown. Leaflets scythe-shaped, dark green, and shiny. Nuts flattened, angular.

Uses

Wood given only second or third commercial rating, largely because of "shake".

Distribution

ARKANSAS: Occurs only in the overflow areas of eastern and southern sections. ELSEWHERE: Range relatively narrow; from southeastern Indiana across southeastern Missouri and eastern Arkansas to southeastern Texas, east to Florida, and only along coast to southeastern Virginia. Most abundant, and reaches largest size in western Mississippi, eastern Louisiana, and southern Arkansas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 22 feet 2 inches, height 150 feet, spread 87 feet. Near Blountstown, Florida.

Nutmeg Hickory

(*Carya myristicaeformis* (Michx. f.) Nutt.)
(Synonym *Hicoria myristicaeformis* (Michx. f.) Britton)

Local Names: Blasted Pecan

Description

Tree similar to other hickories of overflow lands. **Bark** dark brown, tinged with red, with shallow fissures, ridges separating into irregular, close, dark, reddish-brown scales. **Leaves** compound, 7-14 inches long, of from 5-9 wedge-shaped leaflets; leaflets toothed, thin, firm, dark green above, more or less hairy and silvery white beneath, with a hairy midrib that is a striking feature by which species may be recognized. **Flowers** similar to those described for pecan. **Fruit** distinctive, usually solitary, 1½ inches long; husk with yellow-brown scurfy hairs, four ridges splitting to the base, and exceedingly thin. Nut egg-shaped, rounded at ends, not flattened; kernel sweet. Name applies to nutmeg-like markings of gray streaks and spots on the surface of the reddish-brown nut and to thick, hard, bony shell. **Wood** similar to other hickories, hard, moderately heavy (42 pounds per cubic foot), close-grained, tough, light brown in color; annual rings distinct, rays indistinct, pores in rings and fairly distinct.

Fruit, three-eighths natural size.
Leaf, one-quarter natural size.
Twig, one-half natural size.

Key Characteristics

Leaflets 7-9 and sometimes 5. Nut thick-shelled, ellipsoidal-cylindric; seed sweet. Bud scales valvate. Bark reddish brown and irregularly broken into thin scales. Winter end-buds ¼ inch long, covered with thick, brown, scurfy hairs. Leaves as noted.

Uses

Similar to those of other hickories, but of low value.

Distribution

ARKANSAS: In the floodplains and swamps of the Red River and in the lower Arkansas River valley, probably being relatively rare in latter region; restricted to rich soil of floodplains where it may attain a height of about 90 feet. ELSEWHERE: A tree of the streams and swamps of the Gulf Coast and lower Mississippi River valley region.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

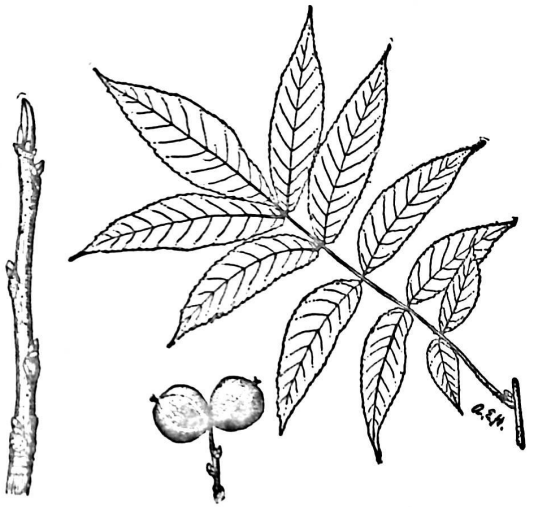
Bitternut Hickory

(*Carya cordiformis* (Wang.) K. Koch)
(Synonym *Hicoria cordiformis* (Wang.) Britton)

Local Names: Pignut, Pignut Hickory

Description

Tree: Forest tree 100 feet tall and 2-3 feet in diameter, with stout branches forming a broad crown. **Bark** granite gray, faintly tinged with yellow, broken into thin, plate-like scales. **Leaves** compound, with 7-11 leaflets, and about 6-10 inches long; leaflets with toothed edges, smooth above and somewhat hairy beneath, smaller than those of most hickories. **Flowers** similar to pecan. **Fruits** about 1 inch long, with a thin, four-ridged husk; nut thin-shelled with bitter kernel. Husk has large cavities in it. Tree easily distinguished by its fruit. **Wood** similar to shagbark hickory but not so heavy (46 pounds per cubic foot).



Leaf and Fruit, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaflets 7-9. Nut thin-shelled, not angular; seed bitter. Terminal bud slender and yellow; bud scales valvate (not overlapping). Bark light red brown, cracked into thin plates on the surface.

Uses

Rough construction; fuel; in manufacture of wagon stock, tool handles, agricultural implements, sporting goods, shuttles, ladders, and furniture. Considered one of the best woods for smoking meat.

Distribution

ARKANSAS: Found sparingly in rich, fairly well drained soils throughout state; most likely in small stream valleys, gulleys, or coves. UNITED STATES: From southern Maine west to southeastern Minnesota, south to east-central Texas, east to central Georgia, then north to Virginia, omitting the coastal region. The common and familiar thin-husked bitter hickory of the midwestern states.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 11 feet 8 inches, height 133 feet, spread 110 feet. Richland County, S. C.

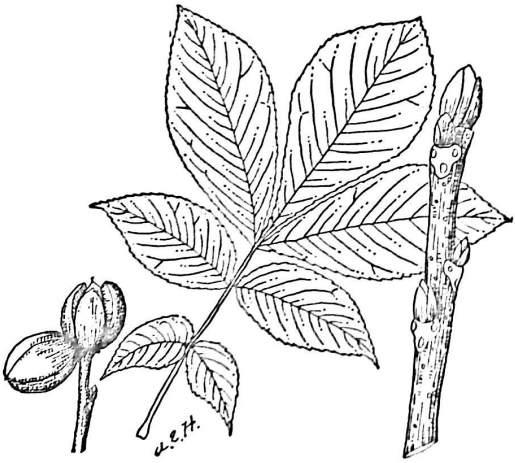
Mockernut Hickory

(*Carya tomentosa* Nutt.)
(Synonym *Hicoria alba* (L.) Britton)

Local Names: White, White Heart, Big Bud, and Red Hickory, Bull Nut

Description

Tree may attain height of 130 feet and a diameter of 3 feet although in the uplands may be much smaller. **Branching:** Lower branches may hang downward. **Bark** dark gray, hard, closely and deeply furrowed, often apparently cross-furrowed or netted. **Leaves** compound, 8-15 inches long, resinous-scented (making it distinguishable in summer), with 7-9 large, pointed, toothed, hairy leaflets. **Flowers** like those of the pecan and other hickories. **Fruit** oval, often slightly pear-shaped, with a very thick, strong-scented husk that splits nearly to the base when ripe. Edible nut is of various forms but sometimes 4- to 6-ridged and very thick-shelled. **Wood** heavy (51 pounds per cubic foot), hard, tough, strong, and white except for the comparatively small, dark brown heartwood; a valuable wood.



Leaf, one-fifth natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaflets 5-9, more or less hairy. Nut reddish brown, thick-shelled. Bark deeply furrowed, gray. In winter recognizable by the buds that are conspicuously larger than any of the other hickories with the possible exception of the shagbark; bark prevents confusion between these two species.

Uses

Similar to uses of the other hickories.

Distribution

ARKANSAS: Well distributed over state, being common in both uplands and lowlands except in very wet overflow situations. ELSEWHERE: From southeastern Kansas east through central Indiana, northeast to Vermont, south to Florida, and west to central-southern Texas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 9 feet 10 inches, height 130 feet, spread 71 feet. Richland Parish, La.

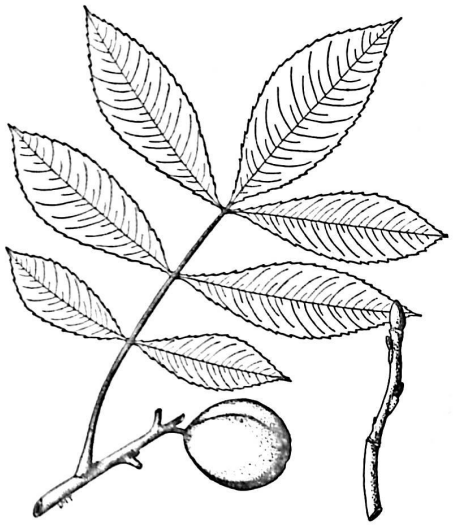
Black Hickory

(*Carya texana* Buckl.)
(Synonym *Hicoria buckleyi* var. *arkansana* (Sarg.) Ashe.)

Local Name: Arkansas Black Hickory

Description

Tree a slow grower, commonly crooked, and always limby; maximum size probably 60-70 feet in height and 20 inches in diameter. **Bark** may be dark gray, irregularly fissured, separating into thin scales or may be nearly black and deeply divided into rough ridges. **Leaves** compound, 8-12 inches long, with 5-7 leaflets; leaflets toothed, sometimes with rusty hairy midribs. **Flowers** like those of the pecan. **Fruit** pear-shaped; hull rather thick, splitting to, or nearly to, the base. Nut somewhat flattened and slightly four-angled, shell about ⅛ inch thick. Kernel edible. **Wood** hard and brittle.



One-third natural size.

Key Characteristics

Pear-shaped fruit. Tree limby and crooked. Young twigs usually smooth.

Uses

Of little use except for fuel.

Distribution

ARKANSAS: Probably one of the most common hickories in the Ozark and Ouachita mountain regions. Occurs most commonly on dry, rocky mountain sides and tops, associated with post and blackjack oaks, winged elm, redcedar, or shortleaf pine. ELSEWHERE: Range rather narrow, from eastern Texas through eastern Oklahoma and the southeastern half of Missouri to southwestern Indiana, south to northwestern Louisiana on the west side of the Mississippi.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

American Hornbeam

(*Carpinus caroliniana* Walt.)

Local Names: Hornbeam, Blue and Water Beech, Ironwood, Musclewood

Description

Tree slow-growing, small, and almost bush-like on poorer sites; on good sites of wet, alluvial soil may attain height of 50 feet and diameter of 18 inches or more. **Bark** distinctive, resembling that of beech or young red maples; smooth, usually dark bluish gray but occasionally light brownish gray. Trunk and large branches usually not round in cross-section but irregular, externally presenting the appearance of wide rounded ridges as of fluting or "muscles". **Leaves** simple, alternate, oval, often long-pointed, double toothed (larger teeth further toothed) along margins, 2-3 inches long, dull green. **Flowers** of two kinds, borne in catkins separately on same tree; male catkins 1½ inches long, evident all winter; female catkins about ¾ inch long with small, leaf-like, three-lobed scales, appearing in spring on ends of twigs. **Fruit** a nutlet about 1/3 inch long, attached to one of the three-lobed scales clustered on ends of twigs. **Wood** very heavy (49 pounds per cubic foot), tough, strong; light brown with whitish sapwood.

Leaf, one-third natural size. Twig, one-half natural size.

Key Characteristics

Smooth, dark bluish gray bark, often mottled, and fluted or ridged up and down. Clusters of small nutlike fruits with leaf-like bracts attached to each one. Leaves smooth.

Uses

Repair of agricultural implements and wagons, wedges, tool handles, cogs, levers, mallets, rake teeth, ladder rungs, handles, wagon and machinery tongues; of little value commercially.

Distribution

ARKANSAS: Well distributed; in northern part occurs in stream valleys, ravines, and occasionally moist soil of north-facing slopes; in south in small and medium-sized stream valleys. ELSEWHERE: From Nova Scotia through southern Quebec to central Minnesota; south through Iowa, eastern Nebraska, Kansas, Oklahoma, and Texas east to Florida. Also a native of southern Mexico and Central America.

Largest Specimens on Record

ARKANSAS: Circumference 3 feet 4 inches, dbh. 12.5 inches, height 41 feet, spread 38 feet. White River Refuge. ELSEWHERE: Records not available.

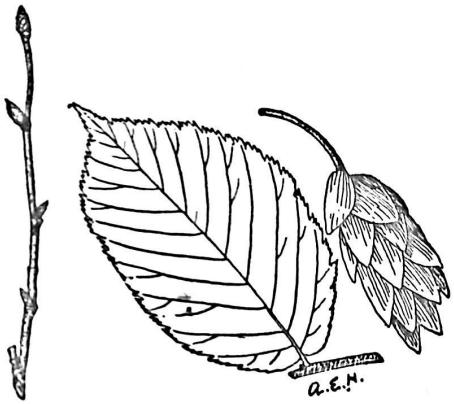
Hophornbeam

(*Ostrya virginana* (Mill.) Koch.)

Local Names: Ironwood, Eastern Hophornbeam

Description

Tree usually 20-30 feet high, 7-10 inches in diameter, terminating in a broad rounded crown. **Bark** mostly light brown, reddish brown, or brownish gray; finely divided into thin scales by which the tree can be recognized. **Leaves** simple, alternate, generally oblong with narrow tips, toothed (often doubly) along the margins, from 2-3 inches long. **Flowers** of two kinds on same tree in early spring; male in drooping catkins which form the previous summer; female in erect catkins on newly-formed spring twigs. **Fruit** resembles that of the common hop vine; if present is the best means of distinguishing the tree; consists of a branch of leafy sac like bracts 1-2 inches long each containing a flattened, ribbed nutlet. **Wood** very heavy (49 pounds per cubic foot), hard, durable, close-grained, and light brown to white in color with pale sapwood.



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Light to reddish brown bark dividing into thin scales. Hop-like cluster of fruits which persist on the branches into winter. Leaves soft hairy above and below.

Uses

About the same as the American hornbeam. Usually considered by foresters a "weed tree".

Distribution

ARKANSAS: More common than the American hornbeam in mountainous and hilly sections but less common or absent in flat, coastal plain region as it is less tolerant to flooding. ELSEWHERE: Much the same as American hornbeam in the east, north, and south but in the northwest extends to the Black Hills of South Dakota. Generally found on soils with a reasonably good moisture supply and satisfactory drainage as in coves, gulleys, and on north-facing slopes; associated with such superior forest trees as white and chinkapin oaks, sugar and red maples, walnut, black cherry, white and green ash, and black gum.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

River Birch

(*Betula nigra* L.)

Local Names: Red, Black, and Water Birch

Description

Tree confined to immediate banks of streams, ponds, and lakes where it may attain a height of 90 feet and diameter of 3-4 feet; frequently found bending over streams. **Bark** reddish brown to cinnamon red, peels back in tough, papery layers which persist on the trunk, presenting a ragged appearance; unlike the bark of other birches, the thin and papery layers are usually covered with a gray powder. On older trunks the bark becomes thick, deeply furrowed, and reddish brown in color. **Leaves** simple, alternate, 2-3 inches long, more or less oval; edges double toothed (that is, the large teeth are further toothed); dark green above and pale yellowish green beneath. **Flowers** catkins, of two kinds, growing on same tree. **Fruit** cone-like, about 1 inch long, with many dry scales. **Wood** light brown, strong, and fairly close-grained (36 pounds per cubic foot).

One-third natural size.

Key Characteristics

The only native birch found at low elevations in the south. The bark provides a ready means of distinguishing the tree, varying from reddish brown to cinnamon red in color and peeling back in tough, thin, curling, papery layers.

Uses

Fuel, furniture, repair of farm machinery and implements, hoops, and fruit baskets; useful as an ornamental, especially when young; of low value as lumber.

Distribution

ARKANSAS: Common in stream valleys. ELSEWHERE: Wide range, extending from southern New Hampshire south to western Florida; west to eastern Oklahoma; north through eastern Kansas, eastern Iowa, southern Minnesota, and southern Wisconsin; east across southern Illinois, Indiana, and Ohio.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 13 feet 6 inches (at 2 feet), height 85 feet, spread 95 feet. Germantown, Pa.

Carolina Beech

(*Fagus grandifolia* var. *caroliniana* (Loud.) Fern. and Rehd.)

Local Names: American Beech, Beech

Description

Tree usually 70-80 feet or more tall, 3-4 feet in diameter; the numerous limbs forming a broad, compact round-topped crown. **Bark** distinctive; thin, smooth and gray even on old trees. **Leaves** simple, alternate, toothed along margins, pointed at tip, 3-4 inches long, with strong, straight veins; when leaf is mature may be tough in texture. **Flowers** of two kinds on same tree; male in rounded masses, female in clusters of 2 or more. **Fruit** ½ to ¾ inch in length, bur-like, enclosing usually two triangular edible nuts. **Wood** very hard, strong, and tough; dark or often light red with thin, nearly white sapwood; annual rings quite distinct, rays indistinct, pores very indistinct and scattered; weight moderately heavy to heavy (44 pounds per cubic foot.)

One-half natural size.

Key Characteristics

Bark the most distinctive characteristic, light gray and so smooth and thin as to tempt the owner of a pocket knife to carve his initials on it. Leaves shiny with prominent veins. Winter buds slender, ¾ to 1 inch long; 2 nuts enclosed in a bur.

Uses

Flooring, interior finish, office fixtures, woodenware, dowels and skewers, handles, fruit boxes, packing boxes, and crates; fuel and charcoal; creosote; a common ornamental.

Distribution

ARKANSAS: Fairly common in Crowley's Ridge region and upper valleys of the Ozark region; occurs sporadically in ravines and on north slopes in the Ouachita Mountains and floodplains of small streams in south-central part but not in the overflow areas. ELSEWHERE: From New Jersey west through southern Ohio, southeastern Oklahoma, and eastern Texas; east to Florida.

Largest Specimens on Record

ARKANSAS: Circumference 9 feet 2 inches, height 101 feet, spread 44 feet. Near DeQueen, Arkansas. ELSEWHERE: Records not available.

Ozark Chinkapin

(*Castanea ozarkensis* Ashe.)

Local Name: Chinquapin

Description

Tree may attain a height of 50 feet or more and a diameter of more than 2 feet in good sites; sprouts readily from stumps, perhaps a large number of trees encountered in upland or hillside forests have developed from sprouts and not seedlings. **Bark** on old trees light brown in broad, flat ridges tinged with red; often these ridges are broken into loose, plate-like scales. **Leaves** long-pointed with many straight veins and coarse-pointed teeth along margins, simple, alternate, 5-10 inches long; dark green above, pale and often hairy beneath. **Flowers** of two kinds on same tree; male in long, slender, white, odorous spikes; less conspicuous female flowers in clusters at base of the spike. **Fruit** a prickly bur, 1 inch in diameter, opens in early fall. Single, round or egg-shaped edible nut dark chestnut brown and spiny, the inside of the thin coat being lined with fine whitish hairs. **Wood** coarse-grained, light (about 31 pounds per cubic foot), hard, rather easily broken, dark brown in color with little distinguishable sapwood.

One-third natural size.

Key Characteristics

Leaves similar to chestnut but smaller (about 8 inches), usually light colored and hairy beneath. Single rounded nut enclosed in a spiny bur about 1 inch in diameter.

Uses

Nuts are edible; wood cut and marketed with chestnut for railroad ties and fence posts; tree suspected of producing bitter honey.

Distribution

ARKANSAS: Confined largely to slopes of Ozark Mountains; grows better in soils fairly well supplied with moisture but also on rocky rather dry slopes and hilltops. ELSEWHERE: Range narrow, probably confined to southern Missouri, Rich Mountain of Oklahoma, and Ozark and Ouachita mountains of Arkansas. Other smaller species farther south.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

THE OAKS (*Quercus* L.)

The OAKS include some of the most valuable and important broadleaf trees of Arkansas, as well as of the rest of North America. Of the timber trees, there are more species and varieties of this group than any other in the state. Nearly sixty different oaks, their varieties, forms, and hybrids have been recognized and reported in Arkansas. While some of these oaks are of considerable value, there are others which seldom produce anything but fuel, ground cover, and soil protection. The blackjack oak might be mentioned in this category. Only the more important ones are included here.

All our oaks have several features in common. The leaves are all simple and alternate, i.e. only one leaf at a node, but they are usually crowded at the tips of the twigs and leave a cluster of buds at the ends of the twigs, which is quite characteristic in the winter condition. The flowers are of two kinds, usually on the same trees. The male flowers appear as the leaves unfold, in drooping clusters from 2 to 5 inches long, and produce clouds of pollen which is carried by the wind to the female flowers. These are very insignificant, in the axils of the new leaves. The fruit is the familiar and often very distinctive acorn, a thin-shelled nut set in a more or less shallow, scaly cup. In a few of the oaks, such as bur and overcup oaks, this cup almost entirely surrounds the nut.

The oaks are variously divided into groups, but the usual division makes two groups: 1. the WHITE OAKS and 2. the RED OAKS. The best lumber is usually furnished by members of the white oak group, but both may be of considerable value. The following classification will show at a glance the differences between the members of these two groups of oaks.

CLASSIFICATION OF THE ARKANSAS OAKS

Character	White Oak Group	Red Oak Group
Leaves	Lobes, if present, rounded. No bristles on tips.	Lobes, if present, angula A bristle at tip of leaf an each lobe.
Acorns	Require only ONE season to mature, so ripen among leaves of current year.	Require 2 seasons to mature, so ripen on twigs of previous season.
	Frequently sweet and edible.	Usually bitter and inedible.
Wood	Light colored, pores closed, durable in the ground.	Dark colored, pores open, NOT durable in the ground.
Bark	Usually light gray.	Usually dark, even black.
Principal Arkansas Species	White Post Bur Overcup Chinkapin Swamp Chestnut	Northern Red Southern Red Cherrybark Nuttall Shumard Blackjack Pin Black Water Willow Shingle

It should be mentioned that many oaks show EXTREME variation in leaves and other characters, not only between different individuals of the same species, but in different parts of the same tree. Usually leaves exposed to greater amounts of sunlight will show a greater amount of lobing. Leaves in the juvenile condition are often very different from leaves of the same tree in a mature condition, and are difficult to identify.

White Oak
(*Quercus alba* L.)

Description

Tree attains height of 100 feet and diameter of 3 feet on better sites and in well-stocked stands; grown in the open is much shorter and spreading and makes an excellent shade tree. **Bark** light ashy gray, with more or less thin, loose scales or broad plates. **Leaves** alternate, simple, 5-9 inches long and about half as broad; deeply divided into 5-9 rounded finger-like lobes; young leaves soft silvery gray, yellow, or red while unfolding, later becoming dull blue green above and pale or grayish green beneath. **Flowers** of two kinds on same tree; male in pendulous catkins, and inconspicuous female flowers singly or in pairs. **Fruit** an acorn, maturing the first year. Nut often cylindrical, ¾ to 1 inch or more long, light brown, about one-fourth enclosed in firm, warty cup. **Wood** heavy (48 pounds per cubic foot), strong, hard, light brown.

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves deeply divided into 5-9 rounded, finger-like lobes. Bark light ashy gray covered with loose scales or broad plates. Large irregular branches. Oblong, light brown acorns with warty cups. Distinguished from post and overcup oaks by size and shape of acorns and shape of leaf.

Uses

Construction, shipbuilding, tight cooperage, furniture, wagons, implements, interior finish, flooring, crossties, millwork, handles, fuel; an excellent ornamental.

Distribution

ARKANSAS: In most counties and on a wide variety of soil situations; does not grow in Mississippi and Arkansas river overflow soils except on higher, better drained terraces; at its best in ravines, small stream valleys, and on north slopes with adequate moisture supply. ELSEWHERE: All of eastern United States except extreme northern and southern portions.

Largest Specimens on Record

ARKANSAS: Circumference 18 feet 7 inches, height 88 feet, spread 107 feet. Near Dardanelle. ELSEWHERE: Records not available.

Post Oak

(*Quercus stellata* Wang.)

Description

Tree commonly reaches height of 50-80 feet and diameter of 1-2 feet and sometimes considerably larger; grows slower than black oak and faster than blackjack oak. More useful than blackjack oak in early stages of reforestation of poor sites; can be used as shade tree in dry, sloping, stony situations where few others will grow. **Branching:** Rough irregular branches often persist near ground forming a dense, broadly rounded crown. **Bark** darker gray than white oak or even reddish dark gray, usually ridged and fissured crosswise instead of scaly. **Leaves** 4-5 inches long and sometimes nearly as broad; deeply five-lobed with broad, rounded divisions, lobes broadest at ends; rather thick and somewhat leathery; dark green and shiny above, lighter green, rough, and hairy beneath; often hang on tree all winter. **Flowers** similar to those of white oak. **Fruit** matures in one year, a rather small acorn ½ to ¾ inch long, about one-third enclosed in the hemispherical cup whose scales are diamond-shaped and ridged. **Wood** light or dark brown, heavy (47 pounds per cubic foot), hard, close-grained, durable.

One-third natural size.

Key Characteristics

Leaves cross-shaped in outline, tufted at ends of the twigs. Dark, gray-brown bark divided into conspicuous blocks. Crooked branches.

Uses

Crossties, fence posts, and for furniture and other purposes along with others of the white oak class.

Distribution

ARKANSAS: Common throughout except in overflow regions of Mississippi and Arkansas rivers; the common oak of steep, rocky slopes and ridges of the Ozark and Ouachita mountains but also occurs on rolling, sandy soils of coastal-plain region and on flat, poorly drained, silty soils in southern and southeastern parts of state. On these flat situations the association of post, willow, and southern red oaks is referred to as "post oak flat." In mountain areas, usual associates are blackjack and black oaks, black hickory, winged elm, eastern redcedar, and shortleaf pine. ELSEWHERE: From New England across central Pennsylvania, Ohio, Indiana, Illinois; to southeastern Kansas, central Oklahoma and central Texas; thence to northeastern Florida.

Largest Specimens on Record

ARKANSAS: Circumference 12 feet 7 inches, height 102 feet, spread 74 feet. Near Hope. ELSEWHERE: Circumference 17 feet, height 86 feet, spread 42 feet. Near Hartwell, Georgia.

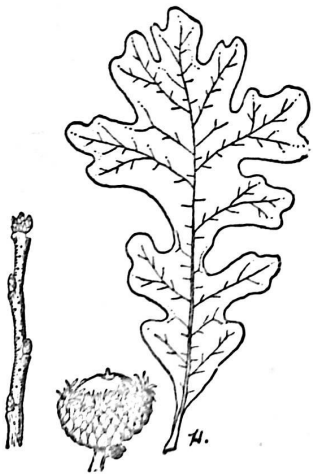
Bur Oak

(*Quercus macrocarpa* Michx.)

Local Names: Mossy Cup, Mossy Cup White Oak

Description

Tree rarely exceeds 80 feet in height but may attain diameter of 6 feet or more; with its wide spreading branches and thick foliage makes a desirable shade or decorative tree. **Bark** usually light gray; broken into small, narrow flakes, or deeply furrowed on old trees. **Leaves** resemble those of white oak in color, usually larger than those of post oak (6-12 inches long), broadest above the middle; usually with the terminal lobe largest, other lobes shorter toward base. **Flowers** similar to white oak. **Fruit** best means of distinguishing tree; a large acorn, maturing in one year, set rather deeply in conspicuously fringed cup and often covered like that of overcup oak; in some localities acorn very large, often 1½ inches or more in diameter; usually larger than that of any other species in state. **Wood** dark or rich light brown with thin, lighter colored sapwood; heavy (45 pounds per cubic foot), strong, tough, durable.



One-third natural size.

Key Characteristics

Large acorn in conspicuously fringed cup. Large leaves, with terminal lobe largest.

Uses

Similar to white oak and marketed with it.

Distribution

ARKANSAS: Relatively uncommon, occurring sparingly throughout most of state except Mississippi floodplain; most likely in small stream valleys or on north-facing slopes where moisture supply is satisfactory and drainage good; occurs uncommonly in dense stands and more likely to be found singly or in small groups in open or semi-open situations. ELSEWHERE: From New Brunswick to foothills of Rocky Mountains in Montana; south through western Nebraska, central Kansas, Oklahoma, and central Texas; northeast through Alleghenies Mountains to New England.

Largest Specimens on Record

ARKANSAS: Circumference 18 feet 4 inches, height 115 feet, spread 96 feet. Near Luxora. ELSEWHERE: Records not available.

Overcup Oak
(*Quercus lyrata* Walt.)

Description

Tree may attain height of 100 feet or more in favorable sites; a fine tree of southern bottomlands. **Bark** likely to resemble that of white oak, being light ashy gray tinged with red under the scales; in thin, loose scales or broad plates. **Leaves** may occasionally resemble those of white oak but are usually less lobed and more narrow and wedge-like at base; in some forms quite narrow; from 5-9 inches long with 5-9 lobes; dark green above and sometimes whitish beneath but usually only a paler green; commonly turn a bright scarlet or scarlet to orange in autumn. **Flowers** similar to those of white oak, open with the unfolding of the leaves. **Fruit** an acorn ripening the first year, quite distinctive; usually large (1 inch or more in diameter), rounded or somewhat flattened; nearly covered by the ovate, flattened, or nearly spherical cup. Cup thick at base but gradually becoming thinner, often irregularly splitting at margin. **Wood** rich dark brown with thick, lighter colored sapwood, very heavy (52 pounds per cubic foot), hard, strong, durable.

Leaf, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

The name of the tree comes from the acorn being almost entirely enclosed in the thin, nearly spherical cup.

Uses

Tight cooperage especially; but practically the same as white oak.

Distribution

ARKANSAS: Occurs commonly in wetter overflow areas of larger streams, associated with sweetgum, water hickory, willow and water oaks, sugarberry, and green ash. ELSEWHERE: From southern Illinois through eastern Oklahoma to central Texas, east to northeastern Florida, north to Virginia, and skirting below Appalachian Mountains to southern Indiana.

Largest Specimens on Record

ARKANSAS: Circumference 14 feet 7 inches, dbh. 55.8 inches, height 87 feet, spread 64 feet. Near Little Rock. ELSEWHERE: Circumference 14 feet 7 inches, height 126 feet, spread 98 feet, Putnam County, Ga.

Chinkapin Oak

(*Quercus muehlenbergii* Engelm.)

Local Names: Chinquapin Oak, Yellow Oak

Description

Tree 80-100 and occasionally 160 feet high, with a tall straight trunk 3-4 feet in diameter. **Branching:** Crown open, narrow, round-topped, composed of rather small branches. **Bark** light gray, breaking into short narrow or oblong flakes on the main trunk and old limbs. **Leaves** oblong, 3-6 inches long and 1½-3 inches wide, equally toothed or notched on the edges; teeth somewhat pointed, which usually distinguishes the species from the swamp chestnut oak. **Flowers** similar to those of the white oak. **Fruit** an acorn that ripens the first season, light to dark brown when ripe, edible if roasted; from ½ to 1 inch long, set in a shallow, tight-scaled cup attached to branch directly or by a very short stalk. **Wood** essentially equal to the white oak in quality but somewhat heavier (54 pounds per cubic foot).

One-third natural size.

Key Characteristics

Thick, glossy, yellow green leaves noticeably crowded at the ends of the branches. Thin, silvery gray bark broken into loose scales. Oval, dark chestnut brown acorn covered about half way in thin, often hairy cup.

Uses

Tight cooperage, interior finish, fuel, rough construction, crossties, vegetable crates, and in manufacture of mission furniture. Lumber often sold as "white oak."

Distribution

ARKANSAS: Distinctly a hillside tree occurring in gulleys, coves, and on north slopes where moisture conditions of soil are superior; occasionally occurs on rather dry, rocky, calcareous soils where it does not grow so fast or tall; usually associated with white and northern red oaks, sugar and red maples, and shagbark hickory. ELSEWHERE: From Maine west through southern Michigan to southern Iowa, south through eastern Kansas and Oklahoma to northeastern Texas, to central Louisiana, and skirting the eastern side of the Appalachian Mountains to Virginia.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 21 feet 2 inches, height 71 feet, spread 87 feet. Near Ross County, Ohio.

Swamp Chestnut Oak

(*Quercus michauxii* Nutt.)
(Synonym *Q. prinus* L.)

Local Names: Cow Oak, Basket Oak

Description

Tree may attain height of 100 feet and diameter of 4 feet in good sites. **Bark** closely resembles that of white oak being silvery white or ashy gray, separating into close scales which may be tinged with red. **Leaves** resemble those of the chinkapin oak but the teeth are rounded instead of pointed; from 4-8 inches long, soft and downy beneath, commonly turn a rich crimson color in autumn. **Flowers** similar to those of white oak. **Fruit** a large acorn that matures the first year, 1 inch or more in diameter and 1½ inches or more long; bright shiny brown and set in a shallow cup. The common name of the tree, cow oak, is said to be due to the fact that cows eat the acorns. **Wood** heavy (47 pounds per cubic foot), hard, very strong, tough, close-grained, light brown with thin, darker sapwood.

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves similar to those of the chinkapin oak but larger and wider above the middle, hairy below, turning a rich crimson in autumn. Very light or silvery gray bark, on old stems broken into rather loose scales. Large, oblong, edible, shiny brown acorn in a cup made up of separate scales.

Uses

Manufacturing lumber, veneer, tight cooperage, agricultural implements; fuel and posts; baskets.

Distribution

ARKANSAS: Found on silt and very fine sandy loam sites in bottoms with cherrybark oak, hickory, blackgums, winged elm, white and green ash, and with white oak on delta terraces; one of the valuable timber trees of the state. ELSEWHERE: Mid-southern Texas to northern Florida, north to New Jersey, southwest skirting the Appalachian Mountains through northern Georgia, northern Alabama and western Tennessee to southern Indiana, southwest to southeastern Oklahoma.

Largest Specimens on Record

ARKANSAS: Circumference 17 feet, height 125 feet, spread 77 feet. Near Fordyce in Dallas County. ELSEWHERE: Records not available.

Northern Red Oak

(*Quercus rubra* L.)

(Synonym *Quercus borealis* var. *maxima* (Marsh.) Sarg.)

Local Name: Red Oak

Description

Tree may attain height of 100 feet or more and diameter of 3-4 feet. **Bark** on young stems and upper limbs smooth, light gray or somewhat reddish-brown gray; on large stems dark brown tinged with red and broken by shallow fissures into regular, flat, and usually smooth plates or strips. **Leaves** simple, alternate, 5-9 inches long and 4-6 inches wide, broader toward the tip, divided into 7-9 toothed and bristle-tipped lobes; firm; dull green above, paler beneath, often turning brilliant red after frost. **Flowers** similar to those of white oak. **Fruit** an acorn that takes two years to mature; from ¾ to 1½ inches long, blunt tipped, flat at the base, barely enclosed by the flat, shallow, dark brown cup, an important distinguishing feature. **Wood** hard, strong, coarse-grained with light reddish brown heartwood and thin, lighter colored sapwood (44 pounds per cubic foot.)

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaf margin bristle-pointed; leaf lobes regular and shallow; no conspicuous tufts of hairs in angles of veins; leaf smooth, dull, dark green. Acorns large, oblong, maturing in two seasons, set in shallow cups. Bark on upper trunk smooth, dark brownish gray with conspicuous, lighter gray, vertical, strips. Winter buds smooth, red brown.

Uses

Flooring, furniture manufacture, construction, sashes and doors, panels, veneer, cooperage, crossties, caskets, fuel.

Distribution

ARKANSAS: Occurring throughout most of state but most commonly found in gulleys, coves, and on north slopes of mountains; usually associated with white and chinkapin oaks, sugar and red maples, and shagbark hickory. ELSEWHERE: From southern part of northeastern states, west to eastern Nebraska, south through eastern Oklahoma, east through northern Tennessee to Virginia.

Largest Specimens on Record

ARKANSAS: Circumference 15 feet 5 inches, near Nashville. ELSEWHERE: Records not available.

Southern Red Oak

(*Quercus falcata* Michx.)

Local Names: Spanish, Finger and Red Oak

Description

Tree usually grows to height of 70-80 feet and diameter of 3 feet or more. **Branching:** Its large spreading branches form a broad, round, open top. **Bark** rough, not deeply furrowed, varies from light gray on younger trees to dark gray or almost black on older trees. **Leaves** vary extremely in size and shape, many types occurring on the same tree; may be bell shaped with three lobes at the end resembling the outline of a hand, or be elongated with several lobes, the center one being longest; always bristle-tipped; notably downy beneath. **Flowers** similar to those of the northern red oak. **Fruit** an acorn borne singly or in pairs, maturing the second year; small (½ inch long), rounded, set in a thin, tight-scaled cup that is usually shallow but may sometimes enclose one-third of the acorn. **Wood** heavy (41 pounds per cubic foot), hard, strong, close-grained, light red with thick, lighter colored sapwood.

Leaf and Fruit, one-third natural size. Twig, one-half natural size.

Key Characteristics

Leaves downy beneath; usually with 3-5 sharply pointed, often curved, bristle-tipped lobes, the central lobe long and narrow, or with three shorter lobes at the outer end; tapered base distinctly rounded; over 5 inches long. Small, round acorns in shallow cups. Buds reddish.

Uses

Wood sold with northern red oak and used for same purposes; bark a source of tannin.

Distribution

ARKANSAS: In mountainous sections on rather dry slopes associated with post, blackjack, and black oaks where it grows slowly and attains height of only 50 feet. ELSEWHERE: Southcentral Texas north to southwestern Missouri, to southern Illinois and Indiana, southeast to northern Georgia, northeast to southern New Jersey, south to Northern Florida, thence west.

Largest Specimens on Record

ARKANSAS: Circumference 24 feet, height 88 feet, spread 116 feet. Near Washington. ELSEWHERE: Circumference 22 feet 1 inch, height 90 feet, spread 115 feet. Near Como, Miss.

Cherrybark Oak

(*Quercus falcata* var. *pagodaefolia* Ell.)
and (*O. falcata* var. *leucophylla* (Ashe) Palmer & Steyerm.)

Local Names: Swamp Red Oak, Swamp Spanish Oak

Description

Tree up to 120 feet tall and a trunk from 4 to 6 feet in diameter, heavy branches forming a wide crown in the open. **Bark** on major branches light gray marked with darker bands and somewhat resembling that of the black cherry; on trunk, dark and rough. **Winter Buds** sharp pointed, reddish-gray slightly hairy, from ¼ to ⅜ inch long. **Leaves** differing from those of southern red oak in their darker green color, pale hairiness beneath, and deeply divided margins into 5 to 11 sharp pointed triangular lobes separated by deep rounded sinuses, extremely variable, passing into Q. *falcata* var. *leucophylla* Ashe, (which in some areas is considered the real Cherrybark oak, while the one with more pointed lobes is considered Swamp Red Oak), which has fewer lobes often cut off at the ends, with thinner leaves, broader above the middle and brownish hairy beneath.

var. **pagodaefolia**

var. **leucophylla**

Key Characteristics

Distinctive "cherry bark" on upper branches, pointed or cut-off lobed leaves downy beneath.

Uses

Best red oak, used for face veneer and general lumber.

Distribution

In Mississippi delta area, widely in first bottoms on the best loamy soils and on most well drained terraces.

Largest Specimens on Record

ARKANSAS: Circumference 19 feet, dbh. 72.7 inches, height 100 feet, spread 89 feet. Near Stuttgart. ELSEWHERE: Circumference 24 feet, height 115 feet, spread 131 feet. Dougherty County, Ga.

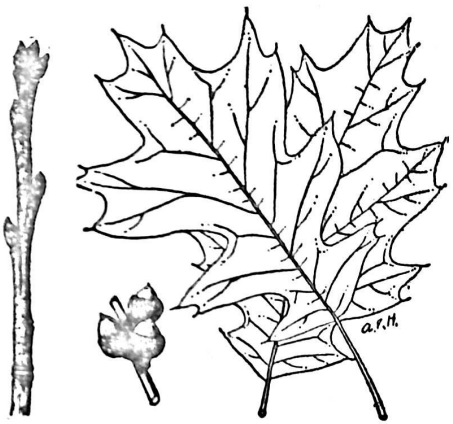
Black Oak

(*Quercus velutina* Lam.)

Local Names: Yellow or Quercitron Oak

Description

Tree may attain height of 100 feet and diameter of 3 feet in ravines and on north slopes; on stony, exposed slopes where it is commonly a dominant tree its growth is slow and it seldom exceeds 70 feet. **Bark** on young trunks is smooth and dark brown; on older trees black with deep furrows and rough, broken ridges; the bright yellow color and bitter taste of inner bark are distinguishing features. **Leaves** vary in shape but resemble those of northern red oak; usually glossy with yellow leaf stalks; may have conspicuous rusty brown hairs in forks of the veins. **Flowers** similar to those of the red oak. **Fruit** an acorn borne singly or in pairs, maturing the second year; ½ to ¾ inch long and one-third to two-thirds enclosed in loose, thin-scaled brown cup; readily distinguishes tree from northern red oak; kernel yellow and bitter. **Wood** hard, heavy (43 pounds per cubic foot), course-grained, bright red brown with a thin outer edge of paler sapwood.



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves varying greatly in shape, mostly downy beneath with conspicuous rusty brown hairs in forks of the veins. Hemispherical acorn 1/3 to 2/3 enclosed in thin scaly cup; tips of cup scales loose. Inner bark bright yellow. Winter buds about ½ inch long, downy, with short tawny hairs.

Uses

Principally as fuel; also for lumber, flooring, slack cooperage, in manufacture of cheap furniture, box veneers, packing boxes, railroad ties, crates, charcoal. A yellow dye may be extracted from inner bark.

Distribution

ARKANSAS: One of most common trees in state growing in a wide variety of soils especially drier ones; most common on slopes of mountains, does not grow in river bottoms. ELSEWHERE: New England through southern Michigan to southeastern Nebraska, south to eastern Texas, east to western Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Pin Oak

(*Quercus palustris* Muenchh.)

Local Names: Swamp Spanish, Water, Swamp, and Water Red Oak

Description

Tree may attain height of 80 feet or more and diameter of 3 feet in well-stocked stands on good sites; growing in the open, as along streets, shorter and more spreading and makes a desirable and beautiful shade tree. **Branches** often short, horizontal. **Bark** distinctive; on young stems smooth, shiny, light brown; on older trunks tight, smooth, covered with small closely attached scales, gray brown to black. **Leaves** resemble those of the Nuttall oak being deeply cut, bristle-tipped, lustrous dark green above and paler beneath; turning crimson color in the fall; tree can be distinguished from Nuttall oak by its habitat and smaller acorn with shallower cup. **Flowers** similar to those of red oaks. **Fruit** an acorn borne singly or in pairs, smaller than that of Nuttall oak, usually less than ½ inch long; often striped like that of scarlet oak but differs by being scarcely held in the shallow, saucer-shaped cup; eaten in winter by water fowls. **Wood** heavy (44 pounds per cubic foot), strong, coarse-grained, light brown with thin, darker sapwood.

Leaf and Fruit, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Small, striped acorn scarcely held in shallow, saucer-shaped cup. Deeply cut and bristle-tipped leaves lustrous dark green above and paler beneath. Lobes of leaves mostly at right angles to midvein and most branches at right angles to trunk. Leaves similar to Nuttall oak.

Uses

Similar to the red oaks, and as a shade tree.

Distribution

ARKANSAS: Chiefly on overflow soils of larger rivers particularly in eastern part; ordinarily associated with gums, swamp maple, water hickories, and other water oaks, but thrives when grown in drier situations. ELSEWHERE: Eastern Oklahoma to eastern Iowa, to southern New England, south to central Tennessee, west across Arkansas.

Largest Specimens on Record

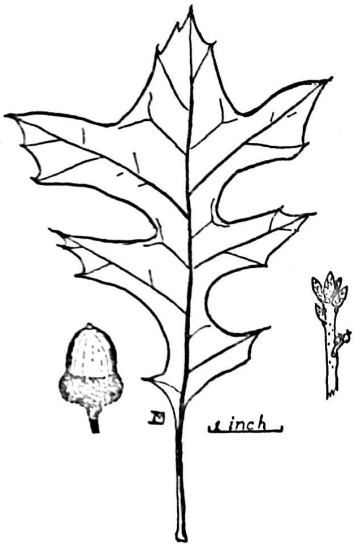
ARKANSAS: Records not available. ELSEWHERE: Circumference 19 feet 10 inches, height 110 feet, spread 85 feet. Near Carrollton, Missouri.

Nuttall Oak

(*Quercus nuttallii* Palmer)

Description

Tree slender, up to 75 feet tall, with conical crown. **Branching:** Upper branches ascending, lower ones horizontal or drooping. **Bark** on young branches olive green tinged with red or reddish brown; on larger branches from gray to dark brownish gray; on trunks dark, slightly fissured, relatively smooth. **Leaves** of 5 to 7 lobes, at nearly right angles to midvein; middle or upper pair longest; each lobe slightly tapering to the end and terminating in bristle-tipped teeth. **Flowers** as in the red and white oaks. **Fruit** about 1 inch long, ½ to ¾ inch in diameter; one-third to one-half enclosed in the deep hemispheric cup which abruptly tapers downward into a short, scaly stalk; scales slightly hairy. **Wood** much like that of pin oak.



One-third natural size.

Key Characteristics

The acorns are the most distinguishing feature. Leaves very much like those of the pin oak. (For a long time considered the same as scarlet oak, and thus recorded.)

Uses

Similar to pin oak. One of the most common and useful trees of the bottoms.

Distribution

ARKANSAS: In coastal plain and better drained bottoms. ELSEWHERE: One of the most common trees of the coastal plain; Mississippi to eastern Texas, north to southeastern Missouri.

Largest Specimens on Record

ARKANSAS: Circumference 13 feet 9 inches, dbh. 51.7 inches, height 129 feet, spread 70 feet. White River Refuge. ELSEWHERE: Records not available.

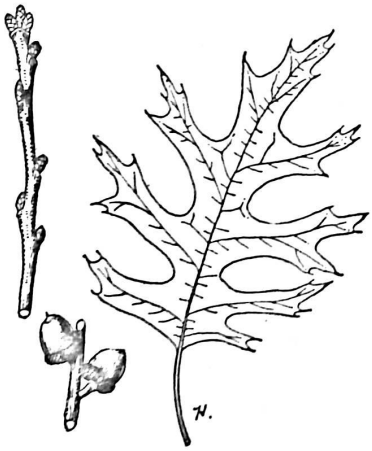
Shumard Oak

(*Quercus shumardii* Buckl.)

Local Names: Texas Oak, Spotted Oak

Description

Tree may attain height of 150 feet and diameter of 4-5 feet or more; one of the largest oaks, if not one of the largest trees of the bottoms. **Bark** on old stems thick, like northern red oak, characterized by pale or light colored plate-like ridges between which are rough, dark furrows. **Leaves** vary in shape; resemble those of the Nuttall and pin oaks, differing in that they have a greater number of bristle tips. **Flowers** similar to those of the northern red oak. **Fruit** a rather large acorn, ½ to ¾ inch wide by ¾ to 1 inch long, light orange brown, either full and plump or definitely tapered with straight sides, borne in a shallow and rather flat saucer-shaped cup. **Wood** heavy, hard, strong, close-grained, light reddish brown.



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves dark green on both sides. Acorn large, cup shallow. Winter buds smooth, dark yellowish brown.

Uses

Much the same as for northern red oak.

Distribution

ARKANSAS: Most common on better-drained alluvial soils of east and south, where it is associated with swamp chestnut, white, water, and willow oaks; sweetgum, and black gum; also grows in moist soil or north slopes, coves, and small stream valleys in hilly and mountainous parts of state where it does not reach as large a size. ELSEWHERE: Eastern Texas to Kansas, northern Missouri, southern Illinois, western Ohio, and through south-Atlantic states to North Carolina.

Largest Specimens on Record

ARKANSAS: Circumference 15 feet 1 inch, height 87 feet, spread 96 feet; B.1.292.2. Dry Fork, Madison Co., Jimmy Morris place. (Rt. 3, Berryville). ELSEWHERE: Circumference 16 feet 4 inches, height 130 feet, spread 107 feet. Near Noxubee National Wildlife Refuge.

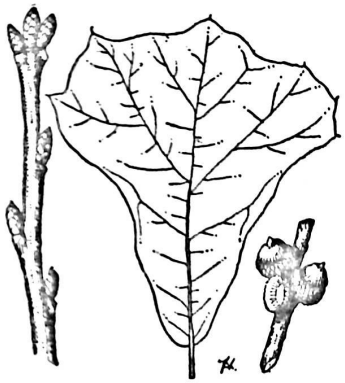
Blackjack Oak

(*Quercus marilandica* Muenchh.)

Local Names: Jack, Scrub, and Ridge Oak

Description

Tree may attain height of 50 feet and diameter of 18 inches in better sites but in dry, stony, sloping situations may be only 35-40 feet high; extremely slow growing; even in favorable, wetter sites does not make large or valuable tree. **Branching:** The many lower, short, drooping branches persist giving tree a characteristic ragged appearance in winter. **Bark** distinctive, rather thick for size of tree, very dark brown or black, deeply divided into nearly square plates, covered by small tight scales. **Leaves** 4-10 inches long, leathery, dark green and lighter beneath; either wedge- or pear-shaped, often three-lobed at tip, lobes bristle-tipped; much variation in lobing. **Flowers** similar to those of red oaks. **Fruit** a small acorn (½ inch long or less), mature in two years; yellow brown and often striped; enclosed for half its length or more in thick, light brown cup. **Wood** strong, heavy (46 pounds per cubic foot), hard, dark rich brown with thick, lighter colored sapwood.



Leaf and Fruit, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Wedge-shaped leaves with very short stalks. Brown hairs over the new twigs, buds, and fruits. Bark almost black, deeply divided into flakes or plates 2-4 inches wide.

Uses

Of little value, but used for fuel and charcoal. Probably the poorest of all Arkansas oaks. Can be used for paper stock.

Distribution

ARKANSAS: Throughout state except in overflow areas but most common on dry, stony, exposed ridges and slopes of the mountainous sections; considered an indicator of dry or poor soil. ELSEWHERE: Most of the eastern states except extreme northern ones; west to southeastern Nebraska, central Kansas, Oklahoma, and central Texas.

Largest Specimens on Record

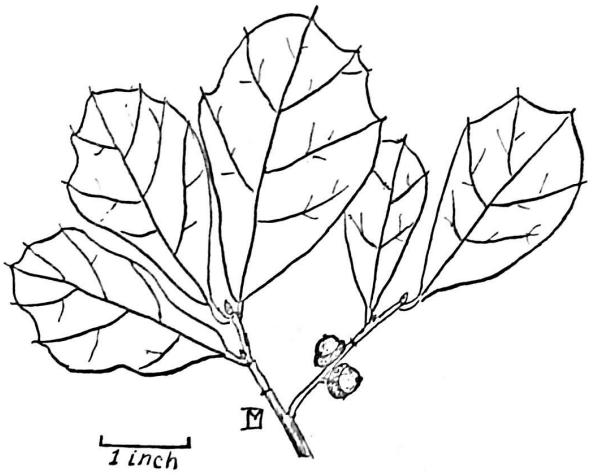
ARKANSAS: Records not available. ELSEWHERE: Records not available.

Arkansas Oak

(*Quercus arkansana* Sarg.)

Description

Tree medium sized up to 65 feet, rounded crown. **Bark** dark brown, smooth when young, much rougher in age. **Leaves** simple, alternate, 5-ranked, broadly obovate, rounded, slightly 3-lobed at the apex, narrowed to the base, somewhat hairy beneath when young, glabrous at maturity; 2-3 inches long, but on sterile branches larger and variable in shape. **Flowers** staminate in catkins in early spring, fertile in axils of leaves. **Fruit** a small acorn in a shallow cup, about 1/3 inch long, ½ inch thick. **Wood** much like that of other red oaks.



Key Characteristics

Small, obovate, rounded leaves and small acorns.

Distribution

Sandy hills, southwest Arkansas, Clark, Hempstead, Howard, Ouachita and Union Counties and in southeastern Alabama, northern Florida and southwest Georgia.

Largest Specimens on Record

ARKANSAS: Circumference 11 feet 6 inches, height 55 feet, spread 57 feet. One mile west of Columbus in Howard County. ELSEWHERE: Records not available.

Water Oak
(*Quercus nigra* L.)

Local Names: Duck, Possum, and Pin Oak

Description

Tree attains height of 100 feet or more in favorable sites. **Bark** only moderately thick and tight, somewhat ridged; ridges with reddish brown, closely appressed scales. **Leaves** variable in shape, always bristle-tipped, mostly oblong, broadest near outer end and narrower at base giving a wedge or, rarely, pear-shaped effect, slightly or distinctly three-lobed at outer end; thin; dull dark green, paler beneath than above; mostly smooth; 2-3½ inches long and 1-1½ inches wide. Leaves remain green for some time and may persist on tree well into winter in southern part of state. **Flowers** like those of the black oak, appearing about the time the leaves unfold. **Fruit** a small round or flattened acorn (1/3 to 1/2 inch long), maturing in two years, round, light or yellowish brown and often striped; enclosed at base only in thin, saucer-shaped cup; eaten by waterfowl in the winter in lowlands. **Wood** heavy (45 pounds per cubic foot), strong, light brown, with lighter colored sapwood.

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Small, thin, wedge-shaped leaves usually with three more or less indistinct lobes, deciduous in late autumn and winter. Small, round, minutely hairy acorns in shallow cups. Bark smooth, light or grayish brown.

Uses

Marketed as "red oak"; lumber and railroad ties; an important ornamental and shade tree.

Distribution

ARKANSAS: Arkansas River valley and in south and east; one of the most common and useful trees in first bottom overflow areas of these sections. UNITED STATES: Distinctly southern including eastern Texas, southern and eastern Arkansas, the Gulf states, eastern Tennessee, Atlantic states to Virginia.

Largest Specimens on Record

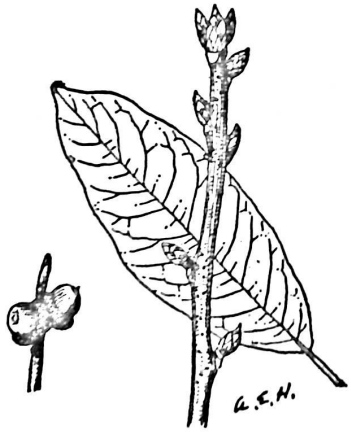
ARKANSAS: Circumference 16 feet 7 inches, dbh. 63.2 inches, height 114 feet, spread 56 feet. White River Refuge. ELSEWHERE: Circumference 20 feet 11 inches, height 72 feet, spread 90 feet. Hawkinsville, Ga.

Shingle Oak
(*Quercus imbricaria* Michx.)

Local Name: Laurel Oak

Description

Tree may attain height of 70 feet in well-stocked stands on good sites. **Branching:** Branches usually horizontal, lower ones often pendulous. **Bark** on twigs dark green and shiny at first, becoming light reddish brown during first winter and dark brown during second; on old trunks fairly thick, reddish brown, irregularly fissured, the broad ridges covered by close, light brown scales somewhat tinged with red. **Leaves** 4-6 inches long and 1 to nearly 2 inches wide, bristle-tipped; margin smooth or slightly wavy and not lobed; smooth, very shiny upper surface at maturity, lower surface rusty and hairy. **Flowers** similar to those of other oaks. **Fruit** an acorn borne singly or in pairs, maturing in two years; 1/2 to 2/3 inch long and nearly as broad; set in a thin, top-shaped or sometimes somewhat flattened cup that embraces from one-third to one-half the acorn. **Wood** coarse-grained, heavy (47 pounds per cubic foot), light reddish brown with lighter colored sapwood.



Leaf, one-half natural size.
Twig, three-fourths natural size.

Key Characteristics

Rather large, unlobed leaves. Small acorns.

Uses

About the same as the red oaks; could be used as decorative or shade tree in hilly sections.

Distribution

ARKANSAS: Not common but occasionally found in mountainous or hilly sections; typically a hillside tree with a preference for well-drained soils; may be found in valleys of small streams in the Ozarks. UNITED STATES: From Pennsylvania west through Ohio, southern Michigan, southern Wisconsin to southeastern Nebraska; south to northern Arkansas; east through Tennessee and northern Georgia, north to Virginia.

Largest Specimens on Record

ARKANSAS: Circumference 10 feet 8 inches, height 89 feet, spread 120 feet 6 inches. Hempstead County Courthouse. ELSEWHERE: Records not available.

American Elm

(*Ulmus americana* L.)

Local Name: White Elm

Description

Tree tall and spreading, attaining height of 100 feet or more in well-stocked stands; in the open, main trunk forks once or more rather near the ground to give tree its characteristic broad and inverted conical shape. **Bark** fairly thick on old trees, ashy or dark gray, divided into irregular, flat-topped, thick ridges; generally firm but may come off in flakes in old trees. An incision in the bark will reveal alternate layers of red and yellow. **Leaves** 3-6 inches long, unsymmetrical at base (one side rounded, other wedge-shaped), double-toothed along margin; smooth above and smooth or rough beneath, distinguishing tree from slippery elm. **Flowers** ¼ inch long, greenish or purplish, on slender stalks 1 inch long; appearing in early spring before the leaves. **Fruit** light green, 3/8 inch long, oval, winged, and short-hairy; seed in center surrounded entirely by the wing except for notch in the wing end; ripens in the spring, falls early, and germinates at once if soil is moist. **Wood** hard, strong, coarse-grained; light brown with thick, lighter colored sapwood (35 pounds per cubic foot.)

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Doubly toothed, generally smooth leaves with parallel lateral veins and unequal bases. Winter buds pointed, chestnut brown, scaly, not hairy. Dark gray, flaky bark. Green fruits produced in clusters. Seed surrounded by narrow wings, notched at tip, with hairy margins.

Uses

Rough construction, hubs for wheels, saddle trees, toy boats, barrel hoops, loose cooperage, veneer for baskets and crates; considered the grandest ornamental and street tree in the world but perhaps should not be planted now because of its susceptibility to two serious diseases which have killed large numbers in the east.

Distribution

ARKANSAS: Probably found in every county; grows in a wide variety of habitats from west overflow land to hillsides that are not too dry. ELSEWHERE: From southern Quebec to Manitoba, southwest to the foot of the Rocky Mountains, southeast to central Texas, east to the Atlantic coast.

Largest Specimens on Record

ARKANSAS: Circumference 14 feet 11 inches, height 78 feet, spread 78 feet. Near Little Rock, ELSEWHERE: Records not available.

Slippery Elm

(*Ulmus rubra* Muhl.)
(Syn. *Ulmus fulva* Michx)

Local Name: Red Elm

Description

Tree not extremely large, maximum height 70-80 feet; may grow straight and slender in well-stocked stands but forks and spreads widely when grown in open. **Bark** dark brown, tinged with red, divided into shallow fissures and covered with large, thick, appressed scales; inner bark fragrant and, when chewed, affords a slippery mucilaginous substance from which tree derives its name. In cross-section bark of older trees appears uniformly red in contrast to bark of American elm which has thin alternate layers of red and yellow. **Leaves** similar to those of American elm but larger and coarser, 4-6 inches long, with double-toothed margins and unsymmetrical base; rather thick; dull dark green and rough on both sides. **Flowers** similar to those of American elm. **Fruit** roundish, flattened seed surrounded by a round, thin, greenish, wing, ½ inch in diameter, usually not notched at end; ripens when the leaves are about half grown and falls soon after. **Wood** close-grained, tough, strong, hard, easier to split than the American elm; dark brown or red with thin, lighter colored sapwood (37 pounds per cubic foot).

Leaf, one-third natural size.

Key Characteristics

Leaves rough (sandpapery) above, conspicuous tufts of white hairs in axils of primary veins beneath. Wings of fruit not hairy. Winter buds dark red brown and hairy. Twigs rough hairy. Inner bark mucilaginous, outer bark uniformly red in cross-section.

Uses

Agricultural implements, fence posts, wheel hubs, sills; inner bark used for medicinal purposes; tree useful as a decorative or shade tree but inferior to American elm in appearance.

Distribution

ARKANSAS: As widely distributed and more common in sheltered situations than American elm; as adaptable to various site conditions. ELSEWHERE: Similar to range of American elm but does not extend as far west.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

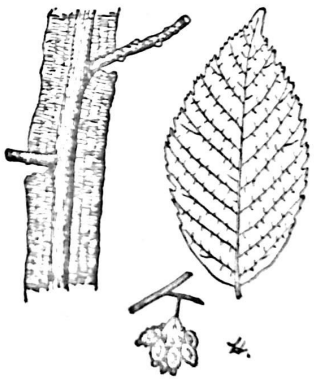
Winged Elm

(*Ulmus alata* Michx.)

Local Name: Cork Elm

Description

Tree grows slowly into a limby, scraggly tree 30-40 feet high on rocky, dry slopes with southern exposure and on ridges, where it is associated with post and blackjack oaks, gum bumelia, hackberry, or redcedar; grows faster into a shapely tree 80 feet or more high in small or medium-sized stream valleys; will successfully invade open, unforested situations. **Bark** rather thin, light brown tinged with red and divided by irregular shallow fissures into flat ridges covered by small, closely appressed scales; branches on young or vigorously growing trees usually with corky ridges. **Leaves** similar to those of the American elm but smaller (1½-3 inches); coarsely double-toothed; dark green and smooth above, pale and softly downy beneath; pointed at the tip, which distinguishes tree from cedar elm. **Flowers** similar to those of American elm, appearing in early spring long before leaves unfold. **Fruit** ripens early, winged like that of American elm, with two small incurved beaks at the end, about 1/3 inch long, borne singly on slender stalk, covered with white hairs. **Wood** hard, not strong, difficult to split, light brown with thick, lighter colored sapwood (47 pounds per cubic foot).



Two-thirds natural size.

Key Characteristics

Small, narrow, coarsely double-toothed, sharp-pointed leaves. Smaller branches with two or more corky ridges about ½ inch wide on either side, on younger trees. Small purplish brown fruits, giving tree a lavender color in early spring. Thin, reddish brown bark broken into irregular flat ridges. Winter buds smooth, slender, sharp-pointed.

Uses

Wheel hubs, mauls, singletrees, doubletrees, spokes, poles, wedges; often used as an ornamental shade tree.

Distribution

ARKANSAS: Widely distributed and common, in a variety of site conditions; usually not important in dense, well-stocked stands. In mountains of northwest may occasionally be found in almost pure, thin stands which are doubtless in "old fields" or deforested situations. ELSEWHERE: Southern Virginia to central Florida, west to eastern Texas, north through eastern Oklahoma to central South Dakota, east to New Brunswick.

Largest Specimens on Record

ARKANSAS: Circumference 13 feet 10 inches, dbh. 52.7 inches, height 100 feet, spread 50 feet. Camden. ELSEWHERE: Circumference 11 feet 1 inch, height 93 feet, spread 81 feet. Morehouse College, Atlanta, Ga.

Cedar Elm

(*Ulmus crassifolia* Nutt.)

Local Names: Cork and Small-Leaved Elm

Description

Tree may attain height of 80 feet with a straight trunk 2-3 feet in diameter. **Branches** short, horizontal or drooping. Like the winged elm, smaller branches have corky ridges. **Bark** rather thick, light brown slightly tinged with red, deeply divided by fissures with intervening broad, flat ridges; bark of branches often winged and corky. **Leaves** small, usually about 1 inch long, doubly toothed, rounded at the tip; dark green and rough above, soft and hairy beneath. **Flowers** similar to those of the American elm but occurring in late summer. **Fruit** oval, winged, about ¼ inch long, hairy especially on the edges, deeply notched at the tip; fall. **Wood** reddish brown, brittle, with a thick layer of lighter colored sapwood.

Three-fourths natural size.

Key Characteristics

Leaves small, with rough surface, tip rounded instead of pointed. Late summer flowers and fruit.

Uses

Same as other elms.

Distribution

ARKANSAS: Abundant along banks and in bottoms of the Red River; in river valleys or sometimes on river cliffs and low hillsides in south and east. UNITED STATES: Range narrow, from Mississippi through southern Arkansas, southwest through Texas to Mexico; the common elm tree of Texas.

Largest Specimens on Record

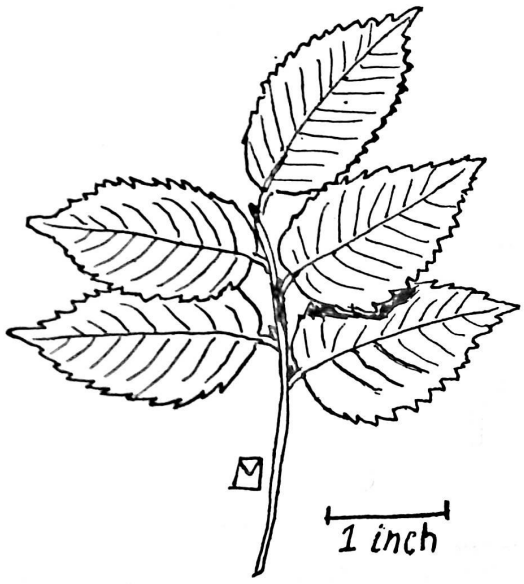
ARKANSAS: Circumference 7 feet 6 inches, height 80 feet. Near Florence in Drew County. ELSEWHERE: Circumference 15 feet 11 inches, height 94 feet, spread 70 feet. Bryan, Texas.

Siberian Elm

(*Ulmus pumila* L.)

Description

Tree small, up to 75 feet, with spreading branches, twigs finely pubescent but glabrous after first year; crown rounded. The typical species is more shrubby, but an arborescent form is the one usually in cultivation. **Bark** rough dark brown much like that of the Winged Elm. **Leaves** simple, alternate, two-ranked, elliptic, ovate to obovate, 1 to 2½ inches long, acute or acuminate at apex, not very uneven at the base, serrations nearly simple, dark green, smooth and often glossy above, firm at maturity. **Flowers** small, numerous in close clusters before leaves appear, anthers violet. **Fruit** small samaras, suborbicular, with membranous wing around a small hard seed, about ½ inch long, apical notch closed. **Wood** hard, heavy and tough.



Key Characteristics

Winter flower buds small, globular; leaves, small, somewhat glossy, dark green.

Uses

Shade and ornamental, but subject to damage by Elm leaf beetles. Not so susceptible to Dutch Elm Disease as is the American Elm.

Distribution

Widely used for yard and street trees, especially in dry localities. Native in Eastern Siberia, North China and Turkestan. Introduced in United States about 1876.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Planertree

(*Planera aquatica* (Walk.) Gmelin)

Local Name: Water Elm

Description

Tree small and spreading, not over 40 feet high, the main trunk dividing once or more rather low and the divisions commonly crooked; difficult to grow except in very wet situations; not particularly desirable as a shade or decorative tree. **Bark** distinctive, light to dark brown, rather thin, falling away in long strips or scales, giving the trunk a ragged appearance; young twigs slender, reddish brown, often becoming gray. **Leaves** resemble those of the small-leaved elms but usually darker green, 2-4 inches long, sharp-pointed, bases unsymmetrical, double toothed on the margins, rough on both surfaces. **Flowers** of two kinds, small, green or greenish yellow, appearing before the leaves. **Fruit** peculiar, consisting of an oval nut-like structure about ⅜ inch long covered with soft and very irregular projections. **Wood** light (33 pounds per cubic foot), coarse-grained, soft, light brown with a broad zone of nearly white sapwood.

Nearly natural size.

Key Characteristics

The peculiar fruits. Leaves with inverted wedge shape.

Uses

Seldom used except for fuel.

Distribution

ARKANSAS: Found at edges of streams, bayous, ponds, and lakes in south and east and in Arkansas River floodplain partly across the state; usually associated with water tupelo, bald cypress, swamp cottonwood, swamp privet, water oak, and water hickory. Not uncommonly found in situations that are submerged for several months of the year. ELSEWHERE: Confined to the lowlands of the South Atlantic and Gulf states and the Mississippi Valley as far north as southern Indiana.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Hackberry

(*Celtis occidentalis* L.)

Local Names: Rough-leaved and Western Hackberry

Description

Tree may attain a height of 90 feet and a diameter of 2 feet or more in better sites; tall and straight in crowded stands, spreading in the open; like the sugarberry and elms, adapted to a wide variety of conditions ranging from river bottom soils to not too dry, rocky slopes. **Bark** fairly thick, light silvery gray, broken on the surface into thick, appressed scales or often smooth except for numerous wart-like projections. **Leaves** resemble those of the elms but the bases are more unsymmetrical (one side larger and lobed at the base, the other somewhat wedge-shaped at base, and usually show 3 veins from base); coarsely toothed along entire margin except for a short distance near point; may be either rough or smooth on both surfaces but more commonly rough on upper surface. **Flowers** similar to those of the sugarberry. **Fruit** round, hard, sweet, 1/3 inch in diameter, dark purple, ripens in September; may hang on tree throughout winter; eaten extensively by birds. **Wood** similar to that of sugarberry (46 pounds per cubic foot.)

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Coarsely toothed leaves which are commonly rough on upper surface. Small, dark purple, sweet, stone fruits borne singly in axils of the leaves. Grayish bark with numerous rough warty outgrowths.

Uses

Boxes, baskets, crating, furniture, burial boxes; although not as desirable as the elm for shade, should be given consideration as a shade tree for severe sites.

Distribution

ARKANSAS: Confined to northern half where it is fairly common. ELSEWHERE: From New England to eastern North Dakota, south to northeastern Oklahoma, east to Virginia.

Largest Specimens on Record

ARKANSAS: Circumference 12 feet, dbh 45.8 inches, height 90 feet, spread 86 feet. Erwin Baird Place, 3 miles south of Garfield, Benton County. ELSEWHERE: Records not available.

Sugarberry

(*Celtis laevigata* Willd.)

Local Name: Southern Hackberry

Description

Tree may attain height of 80 feet or more in wet soils but on slopes may not exceed 40 or 50 feet. **Branching:** In crowded stands may have a straight, clear trunk but in the open usually spreading. **Bark** distinctive, smooth and light gray becoming spotted with age and developing prominent warty projections. **Leaves** thin and smooth, light green on both surfaces or slightly paler beneath, 2½ to 5 inches long and ¾ to 1½ inches wide; taper-pointed; 3 veins arise at base and extend to near the tip; no teeth along the margin or only a few toward the tip. **Flowers** of two kinds, small, green or cream-colored, appearing soon after the leaves unfold. **Fruit** round, ¼ inch in diameter, like a small cherry but with little flesh and a large pit, ripening in September; sweet; at first soft and orange red or yellow but later becoming hard and reddish brown. **Wood** heavy (50 pounds per cubic foot), soft, weak, close-grained, light yellow with thick, lighter colored sapwood.

Leaf and Fruit, one-half natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaf shape and arrangement of veins. The smooth leaf margins distinguish species from the hackberry.

Uses

Same as for hackberry.

Distribution

ARKANSAS: One of the most widely distributed and common trees; occurs in a variety of habitats from flat, wet overflow soils to rather dry and stony slopes; commonly found on exposed hillsides with red cedar, post and blackjack oaks, and winged elm. ELSEWHERE: Virginia to southern Florida, west to Mexico, northeast through eastern Kansas to southern Illinois, east through Kentucky and Tennessee to the Atlantic.

Largest Specimens on Record

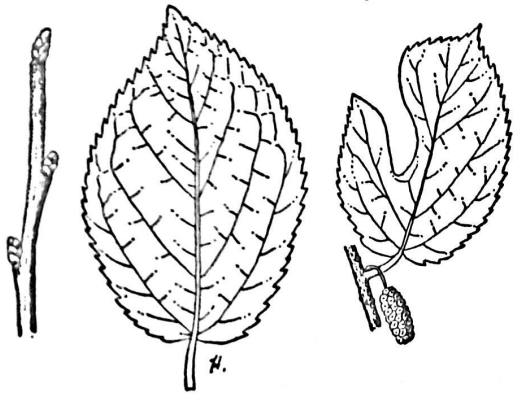
ARKANSAS: Circumference 13 feet 4 inches, dbh. 50.5 inches, height 85 feet, spread 60 feet. Little Rock. ELSEWHERE: Circumference 11 feet 6 inches, height 146 feet, spread 108 feet. Richland County, S. C.

Red Mulberry
(*Morus rubra* L.)

Local Name: Common Mulberry

Description

Tree may attain height of 60 feet and diameter of 2 feet or more under favorable conditions but on hillsides may never exceed 30-40 feet; adapted to a wide range of conditions, occurring in valleys of small and medium-sized streams and on rather dry hillsides. **Branching:** Smooth, stout, spreading branches forming a dense, broad, round-topped crown. **Bark** rather thin, dark grayish brown. **Leaves** variable in shape; often all or nearly all the leaves on a tree will be rounded or heart-shaped, however a few or many may be mitten-shaped or variously lobed; alternate on branches, rather thin, toothed, 3-6 inches long; rough and hairy above, soft and hairy beneath. **Flowers** of two kinds usually on different trees in drooping catkins appearing with the leaves; the female catkin shorter than the male. **Fruit** edible, red or black, resembling a blackberry; however a stalk extends through center and berry may be longer and more narrow. **Wood** soft, weak, light orange yellow with thick, lighter colored sapwood; 45 pounds per cubic foot; sap of twigs is usually milky.



Leaves, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves rough, toothed, variously lobed or unlobed. Milky sap. Dark grayish brown bark. Fruit similar to a blackberry in appearance.

Uses

Fence posts, boats, tubs, tanks, kegs, vats.

Distribution

ARKANSAS: Throughout the state but never abundantly. ELSEWHERE: Southern New England, to southern Ontario, to southeastern South Dakota, south to eastern Texas, east to northern Florida.

Largest Specimens on Record

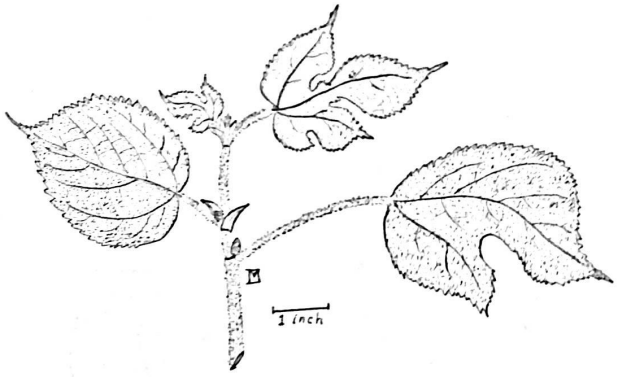
ARKANSAS: Circumference 12 feet 7 inches, height 30 feet, spread 59 feet. Near Siloam Springs. ELSEWHERE: Circumference 17 feet 6 inches, height 70 feet, spread 75 feet. Gettysburg College Campus, Pa.

Paper Mulberry

(*Broussonetia papyrifera* (L.) Vent.)

Description

Tree small up to 50 feet with spreading branches, and often with many suckers. **Bark** smooth, gray-green, somewhat reticulate. **Leaves** simple, alternate or opposite, long-petioled, serrate, unevenly ovate, lobed or unlobed, soft downy above and below; stipules ovate, deciduous. **Flowers** small, staminate in 2-3 inch catkins, pistillate in globoseheads. **Fruit** small red, protruding from the orange syncarp, less than 1 inch across, not edible. **Wood** soft, light, coarse-grained.



Key Characteristics

The gray-green velvety leaves of variable lobed shape are quite characteristic.

Uses

Mostly for quick shade in the south.

Distribution

In southern and eastern United States, planted as ornamental and shade trees, escaping and becoming naturalized. Native to China and Japan. Introduced in United States in 1750.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

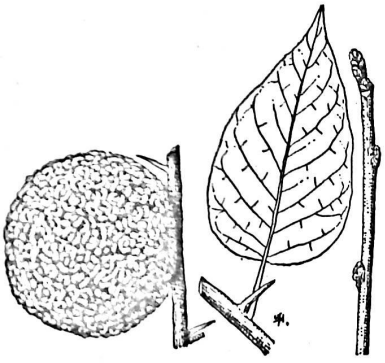
Osage-orange

(*Maclura pomifera* (Raf.) Schneid.)
(Synonym *Toxylon pomiferum* Raf.)

Local Names: Bois d'arc, Mock Orange, Bow Wood, Hedge, Hedge Apple

Description

Tree may attain height of 60 feet or more and diameter of 2 feet or more on good soil; occurs as single tree in more or less open situations in mountainous regions, or less commonly in small groves. **Branching:** Erect on young trees; very crooked and irregular on older trees; vigorous branches bear a straight 1-inch thorn at each leaf or node. **Bark** deeply and irregularly divided into ridges, gray brown and sometimes tinged with yellow; stripping off on old trees. **Leaves** simple, alternate, smooth-edged, sharp or dull-pointed, 3-5 inches long; lustrous green above, turning bright yellow in autumn. **Flowers** of two kinds borne of different trees; small, light green or yellow; male in an elongated cluster, female in a round ball. **Fruit** globular, 2-5 inches in diameter, greenish yellow or yellow, somewhat resembling a large, rough orange, aromatic; its sap, like that of rest of tree, milky and sticky. **Wood** heavy (48 pounds per cubic foot), exceedingly hard, strong, tough; heartwood bright orange or orange brown, sapwood light yellow; wood turns brown when exposed.



Leaf and Fruit, one-quarter natural size.
Twigs, two-thirds natural size.

Key Characteristics

Fruit globular, greenish yellow or yellow, somewhat resembling a large, rough orange; with a straight stout thorn about 1 inch long at each node.

Uses

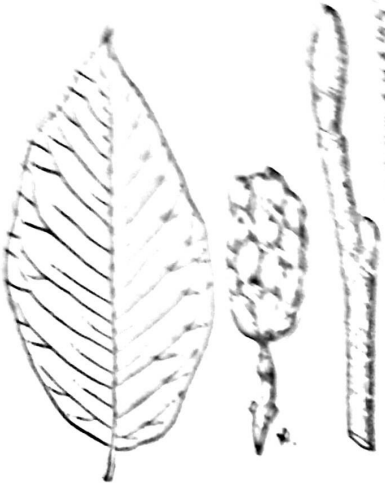
Extensively for hedges; durable wood used for posts and prized for longbows; heartwood yields a dye comparable to fustic.

Distribution

ARKANSAS: Most frequently in open situations or semi-open woods in south (particularly southwest.) UNITED STATES: Narrow range from southern Arkansas through central Oklahoma to central and southern Texas and northern Louisiana. However it has been cultivated and is found, planted or escaped, throughout the midwestern states where it was used extensively at an early date in place of fences.

Largest Specimens on Record

ARKANSAS: Circumference 12 feet 6 inches, height 60 feet. South of Hickory Plains. ELSEWHERE: Circumference 23 feet, height 50 feet, spread 90 feet. Brookneal, Virginia.



Leaf, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves large, thin, smooth, yellow green, margins entire or wavy. Large, smooth, green, cucumber-like fruit turning dark red at maturity. Rough bark. Large fuzzy winter buds; as in all magnolias the bud "cap" (stipules) fall away disclosing the new leaf and leaving a scar completely encircling twig at each leaf. Flowers green or greenish yellow, bell-shaped, 5-6 inches across.

Uses

Often marketed with tulip tree and mixed hardwoods; furniture, door panels, venetian blinds, mantels, interior finish, woodenware; decorative or shade tree.

Distribution

ARKANSAS: Occurs sparingly in deep ravines, coves, and on lower north slopes of mountains, and on Crowley's Ridge; associated with sugar maple, beech, tuliptree, and others; its presence indicative of superior soil moisture supply, shade, and protection from wind. ELSEWHERE: Western New York to southern Illinois, eastern Oklahoma, northern Alabama.

Largest Specimens on Record

ARKANSAS: Circumference 10 feet, height 65 feet. Forrest City. ELSEWHERE: Circumference 10 feet 11 inches height 97 feet, spread 65 feet. Longwood Gardens, Delaware County, Pa.

Leaf, one-sixth natural size.
Twig, one-half natural size.

Key Characteristics

Winter buds long and smooth; stipular scars around twigs at each node. Large leaves borne on stout stems. Aggregate fruit oblong, red when mature, 3-4 inches long. Bark light gray brown.

Uses

Similar to cucumbertree; could probably be used as an ornamental in shady, protected situations.

Distribution

ARKANSAS: Not as common but in essentially the same situations as the cucumbertree; in addition along margins of swamps in southwest-central part of state. ELSEWHERE: Similar to range of the cucumbertree but not so far westward in the Ohio River valley.

Largest Specimens on Record

ARKANSAS: Circumference 3 feet 1 inch, height 53 feet, spread 28 feet. South of Boxley. ELSEWHERE: Circumference 9 feet 8 inches, height 45 feet, spread 48 feet. Bucks County, Pa.

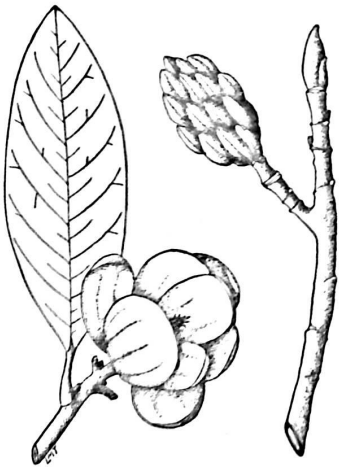
Sweetbay

(*Magnolia virginiana* L.)

Local Names: Bay, Swamp Magnolia, White Bay, Sweetbay Magnolia

Description

Tree usually rather slender, attaining height of 70 feet. **Bark** rather smooth, at least not conspicuously roughened except on old trees; light or silvery gray. **Leaves** oblong or oval, covered when they unfold with long white, silky hairs which soon fall off; at maturity 4-6 inches long, 2-3 inches wide; bright green and shiny above, nearly white beneath; usually fall late in November or may persist until spring. When the leaves are moved by wind, the white undersurfaces make the tree very conspicuous in a forest of dark-leaved trees. **Flowers** creamy white, fragrant, about 2½ inches across, open in late spring and early summer. **Fruit** oval, dark red, about 2 inches long. **Wood** soft, light brown tinged with red; sapwood thick, creamy white; weight about 32 pounds per cubic foot.



One-half natural size.

Key Characteristics

Small, creamy white, fragrant flowers. Bright, shiny green leaves nearly white beneath. Twigs and fruit like those of other magnolias.

Uses

Decorative and shade tree; wood used much as tulip and cucumbertree.

Distribution

ARKANSAS: Fairly common along streams and around ponds in the south. UNITED STATES: In lowlands of the South Atlantic and Gulf states and in Mississippi River basin as far north as middle-western Arkansas.

Largest Specimens on Record

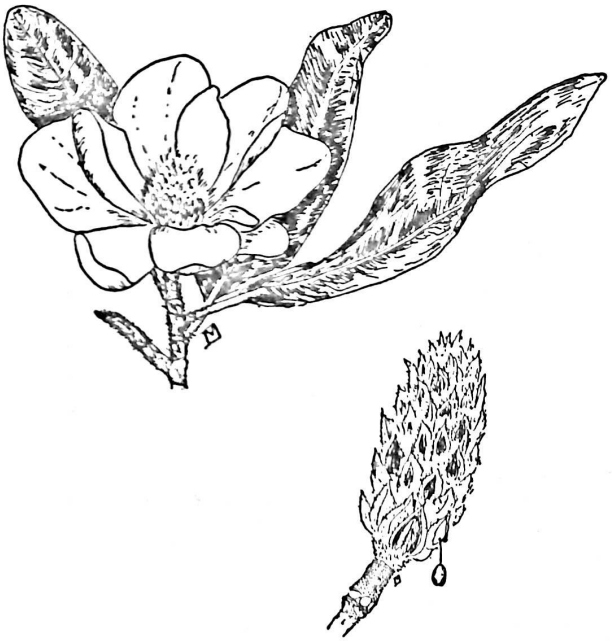
ARKANSAS: Circumference 6 feet 4 inches, dbh 24.38 inches, height 86 feet. Lanebury, 9 miles south of Prescott. ELSEWHERE: Records not available.

Southern Magnolia

(*Magnolia grandiflora* L.)

Description

Tree has broad, rounded top; tall, straight trunk nearly 2 feet in diameter; native in Louisiana and other Gulf states; extensively planted in Arkansas as an ornamental. **Branching** small, spreading. **Bark** smooth, gray, or gray-brown, covered with thin scales on older parts. **Leaves** 6-8 inches long, leathery, evergreen, elliptical to ovate, margins entire; undersides, and petioles often covered with rusty brown down. **Flowers** large, 7-8 inches across, showy, white, fragrant. **Fruit** conelike, hairy; about 4 inches long, 2 inches thick; red seeds hang on white threads from separate units of the fruit. **Wood** hard, creamy white turning brown on exposure, weight about 32 pounds per cubic foot.



One-third natural size.

Key Characteristics

Large, glossy, evergreen leaves; large white flowers about 8 inches in diameter.

Uses

Baskets and crates.

Distribution

ARKANSAS: Not native, but planted in all parts for its evergreen shade and showy white flowers. ELSEWHERE: Gulf coast and to North Carolina.

Largest Specimens on Record

ARKANSAS: Circumference 13 feet 7 inches, height 72 feet, spread 48 feet. Little Rock. ELSEWHERE: Circumference 21 feet 10 inches, height 72 feet, spread 71 feet. Lighthouse Hotel, Biloxi, Miss.

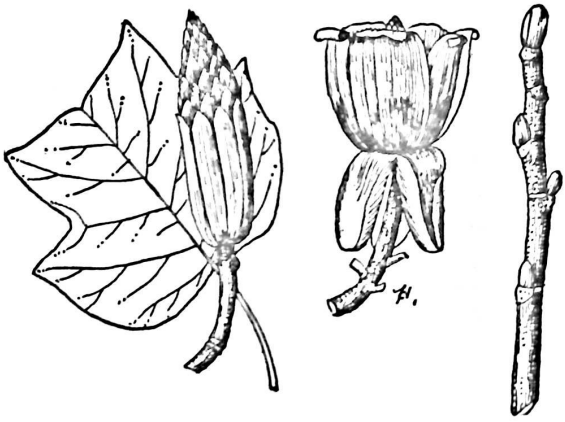
Tuliptree

(*Liriodendron tulipifera* L.)

Local Names: Yellow Poplar, Tulip Poplar

Description

Tree credited with attaining height of 150 feet or more and diameter of 7 feet or more; one of the largest trees of eastern United States. **Bark** on young branches smooth and gray brown, becoming scaly; on old stems deeply furrowed and ridged, brown, rather thick. **Leaves** distinctive in shape, 4-6 inches long, four-lobed (sometimes six); dark green in summer turning yellow in autumn. **Flowers** greenish yellow, tulip-shaped, of six petals, appearing in April and May. **Fruit** narrow, light brown, scaly, cone-like, about 2½ inches long; individual parts winged. **Wood** light (28 pounds per cubic foot), soft, even-grained; light yellow or brown with thin, creamy white sapwood.



Leaf, Flower, and Fruit, one-third natural size.
Twigs, two-thirds natural size.

Key Characteristics

Large green and orange tulip-shaped flowers. Four-lobed rounded, dark green leaves. Buds smooth, green, somewhat flattened, composed of two halves (stipules) which split apart disclosing a small folded leaf and another, similar, smaller bud; stipules fall away leaving a scar completely encircling twig at each leaf. Cone-like fruit made up of winged parts with a seed imbedded at base of each.

Uses

For almost all purposes; house construction, fences, vehicles, furniture, ships, boats, slack cooperage, interior and exterior trim, veneers, and other high-grade uses; good source of pollen for bees, and of spring honey in eastern Arkansas.

Distribution

ARKANSAS: Confined to Crowley's Ridge in eastern part of state where it grows in soils with satisfactory water supply; associated with sugar maple, beech, linden, ash, white and chinkapin oaks, and shagbark hickory, usually indicative of soil with satisfactory moisture supply and protection from wind and exposure. UNITED STATES: New England west to southern Michigan, through southeastern Missouri and eastern Arkansas to northeastern Louisiana, east to northern Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

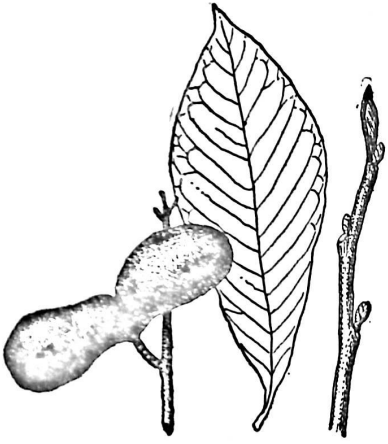
Pawpaw

(*Asimina triloba* (L.) Dunal.)

Local Names: Custard Apple, Arkansas Banana

Description

Tree small, not over 40 feet high. **Bark** rather thin, smooth, gray brown in younger stems; becoming somewhat fissured on older trunks; smoother trunks may be marked by large, ash-colored spots. **Leaves** large (8-10 inches long), broad at end and tapering toward base, with an abruptly pointed apex; smooth and light green above, paler beneath. **Flowers** appear before or with leaves, dark purple, of six thick petals in two rows, 1½ inches or more across, occurring singly or in pairs. **Fruit** rounded, from 2-5 inches long, 1½ inches in diameter; soft when ripe, greenish yellow to very dark brown; containing several flattened seeds; flesh edible, nutritious, and considered delicious by some. **Wood** light (25 pounds per cubic foot); soft and weak, coarse-grained, spongy; light yellow shaded with green with thin, darker sapwood.



Leaf, one-quarter natural size.
Twig, two-thirds natural size.

Key Characteristics

Buds soft, velvety, chocolate brown, non-scaly.

Uses

Seldom used except locally, for poles, etc.

Distribution

ARKANSAS: Throughout the state except in overflow areas of larger rivers; in mountainous parts occurs on moist northern slopes, protected gulleys, coves, or small stream valleys; usually occurs as an "under tree" in stands of white, red, and chinkapin oak, shagbark hickory, and sugar and red maples. ELSEWHERE: New York to southwestern Iowa, south through southeastern Nebraska to southeastern Oklahoma and eastern Texas, east to northern Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 3 feet 2 inches, height 41 feet, spread 27 feet. Mineral King, Sequoia National Forest, California.

Sassafras

(*Sassafras albidum* (Nutt.) Nees.)
(Synonym *Sassafras variifolium* (Salisb.) Kuntze)

Local Name: Common Sassafras

Description

Tree presumed by some to be only a small tree because seen so commonly as small shrub or tree in abandoned fields or pastures, but in favorable sites when unmolested may attain height of 80-90 feet and diameter of 4 feet or more. It is considered a pest by many because of its habit of invading pastures and fields. **Bark** of young twigs bright green or reddish brown; on old trunks dark gray or red brown and deeply furrowed. **Leaves** variable in shape, either simply oval, mitten-shaped, or three-lobed, all forms may occur on same tree; acquire attractive shades of red orange and yellow in autumn; young leaves and twigs mucilaginous. **Flowers** small, clustered, greenish yellow, appearing before the leaves unfold; male and female flowers usually on different trees. **Fruit** dark blue or black with single large seed, set in scarlet cup on a scarlet stalk; spicy. **Wood** soft, weak, brittle; dull orange brown with thin, light yellow sapwood; weight 32 pounds per cubic foot.

Leaves, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves of widely different shapes on same tree, all with smooth margins. Characteristic fruit, blue or black on scarlet stalks. Aromatic odor of broken twigs, bruised leaves, and roots.

Uses

Posts, rails, boats, furniture, slack cooperage; the bark of the roots yields oil of sassafras; a spicy tea is made from the smaller roots.

Distribution

ARKANSAS: Occurs widely throughout state except in overflow areas of larger rivers; commonly on dry hillsides but makes better growth in soils that are more moist. ELSEWHERE: Southern Maine through central Michigan to southeastern Iowa, south through eastern Kansas to eastern Texas, east to central Florida.

Largest Specimens on Record

ARKANSAS: Circumference 14.65 feet, dbh 56 inches, height 65 feet, spread 33 feet. N. W. Third Street, Bentonville. ELSEWHERE: Circumference 17 feet 3 inches, height 100 feet, spread 68 feet. Owensboro, Ky.

Sweetgum

(*Liquidambar styraciflua* L.)

Local Names: Red Gum, Gum, Gum Tree, Sap Gum, American Sweetgum

Description

Tree relatively fast-growing, may attain height of 150 feet or more and diameter exceeding 5 feet; tall, straight, and more or less cone-shaped, at least in younger trees. **Bark** on twigs two years or older often roughened by corky scales or ridges; bark on older trunks light gray, rather deeply and irregularly fissured. **Leaves** star-shaped with five pointed lobes and toothed margins; in autumn color may vary from pale yellow through orange and red to deep bronze or purple. **Flowers** of two kinds on same tree; male flowers falling early. **Fruit** a ball, 1 inch in diameter, with projecting points, each part containing a seed, suspended on 2-3 inch stalks; frequently hangs on tree late into the winter. **Wood** medium heavy (34 pounds per cubic foot), moderately hard; close, even-grained; reddish brown with thin, almost white sapwood.

Leaf, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Star-shaped, five-pointed leaves. Corky ridges often seen on the twigs. Fruit ball-like, similar to that of the sycamore but with many projecting points.

Uses

Flooring, interior finish, pulp, boxes, crates, plywood, veneer, cabinets, cooperage; heartwood sometimes used as imitation mahogany, cherry, and walnut; used as an ornamental.

Distribution

ARKANSAS: Extremely common through south and east; in mountainous parts occurs less commonly to sparingly in larger stream valleys; occasionally found on rather dry hillsides; in south invades cut-over timberland or abandoned fields, even to extent of establishing almost pure stands. ELSEWHERE: Southern New England to southeastern Missouri, eastern Oklahoma to middle Texas, east to central Florida.

Largest Specimens on Record

ARKANSAS: Circumference 19 feet 4 inches, dbh. 74 inches, height 131 feet, spread 110 feet 6 inches. Southern part of "Big Island" in Arkansas County. ELSEWHERE: Circumference 19 feet 8 inches, height 125 feet, spread 100 feet. Richland County, S. C.

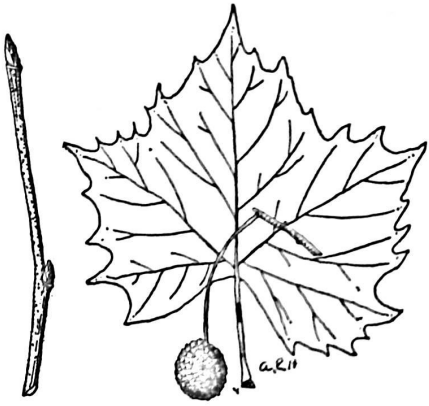
American Sycamore

(Platanus occidentalis L.)

Local Names: Sycamore, Buttonwood, Buttonball Tree, Plane Tree, American Planetree

Description

Tree may attain height of 140 feet or more and diameter of 8 feet or more above the tapering base. **Branching:** In young, more or less crowded stands, may have straight, clean trunk; in more open situations, as is its habit, trunk branched and head spreading. **Bark** on younger branches dark reddish brown; on older branches and trunks, broken into smooth, light gray scales, which on peeling off expose whitish inner bark. **Leaves** rather large, 4-7 inches across, more or less 3-lobed, very coarsely toothed; light green and smooth above, paler beneath; base of leaf stalk hollow, covering the winter bud. **Flowers** of two kinds borne on same tree, and often on same stem; small and greenish; appearing with unfolding of the leaves. **Fruit** a somewhat roughened, grayish yellow ball, 1 inch in diameter, suspended by a flexible stem 3-5 inches long. **Wood** hard, moderately strong, rather difficult to split; tan or light brown; weight 35 pounds per cubic foot.



Leaf and Fruit, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves large, coarse-toothed, light green, shiny, maple-like, covered with small white hairs beneath. Round fruit balls which persist through the winter. Bark smooth, greenish gray to white on young trunks and large limbs; older stems with mottled appearance. Winter buds covered by base of leaf stalk; ruffled stipules at base of each leaf encircle twigs and leave a scar completely around twigs at each node.

Uses

Butchers' blocks, tobacco boxes, furniture, slack cooperage, veneer, woodenware, musical instruments; a common ornamental in parks and along roadsides.

Distribution

ARKANSAS: Common throughout state but rarely makes up large percentage of forest except where found in pure stands in narrow fringes along streams; will grow on hillsides but reaches maximum size along streams. ELSEWHERE: New England to Michigan, through Iowa to southeastern Nebraska, south to western Texas, east to western Florida.

Largest Specimens on Record

ARKANSAS: Circumference 21.45 feet, dbh 82 inches, height 106 feet, spread 120 feet. Near Bentonville. ELSEWHERE: Records not available.

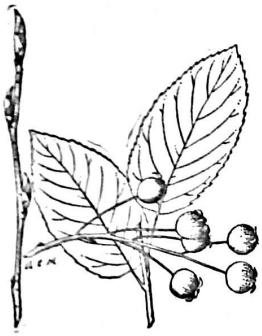
Downy Serviceberry

(*Amelanchier arborea* (Michx. f.) Fern.)
(Synonym *Amelanchier canadensis* (L.) Medic.)

Local Names: Service Berry, Shadblow, Shad Bush, Service Tree, June Berry, Sarvis.

Description

Tree small, up to 50 feet high and usually much smaller. **Bark** pale red brown on twigs, gray to dark gray on larger branches: smooth on younger trunks but acquiring long, shallow fissures. **Leaves** slender-stalked, ovate, pointed, finely toothed, 2-4 inches long; silky, silvery when young, becoming light green, and often dark green, above. **Flowers** white, petals ½ to 1 inch long, in drooping clusters, appearing early, before the leaves; the first large, conspicuous white-flowered tree to blossom in northern Arkansas forests. **Fruit** like a tiny apple, sweet, edible, rounded, red to dark purple when ripe, 1/3 to 1/2 inch in diameter, ripens early in June; eaten by birds and animals and probably by man since time of human habitation. **Wood** heavy (52 pounds per cubic foot), exceedingly hard, strong, close-grained; dark brown with thick, lighter colored sapwood.



One-half natural size.

Key Characteristics

Leaves small, folded lengthwise, densely silky when young. White flowers appearing before leaves. Fruits globular, 1/3 to ½ inch in diameter, purplish red. Smooth, gray bark resembling that of the red maple.

Uses

Occasionally for handles; a desirable ornamental tree; a good honey producer; fruit eaten by birds and other denizens of the forest.

Distribution

ARKANSAS: Throughout state except in overflow areas of larger rivers; attains its largest size in hilly and mountainous parts in sheltered gulleys, coves, and on moist, north-facing slopes; associated with white, red, and chinkapin oaks, red and sugar maples, and shagbark hickory; fairly common also on steep and stony mountain slopes where it is associated with black and post oaks and upland hickories. ELSEWHERE: Quebec southwest through Michigan, to southeastern Nebraska and southeastern Oklahoma, east to western Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

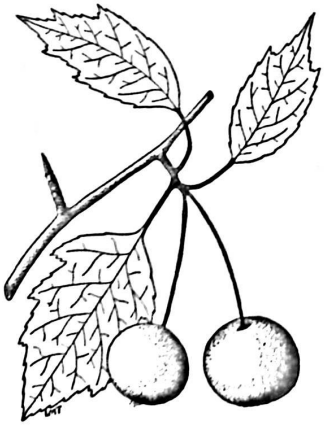
Wild Crabapple

(*Malus ionensis* (Wood) Britton.)

Local Name: Crabapple

Description

Tree never large, probably not exceeding 30 feet in height; more or less thorny. **Bark** thin, dark reddish brown; broken on surface into plate-like scales. **Leaves** narrow, oval, either rounded or pointed at tip; usually with several large teeth that are further toothed; dark green and shiny above, pale yellow green and somewhat fuzzy beneath; about 3½ inches long. **Flowers** pink or rose, 1 to 1½ inches across, in few-flowered clusters, very fragrant. **Fruit** an apple, spherical or somewhat flattened; 1 inch in diameter; pale yellow green; very aromatic with hard, acid flesh and a greasy, waxy skin. **Wood** heavy (about 43 pounds per cubic foot), hard, close-grained; light brown tinged with red, with thick, yellow sapwood.



One-half natural size.

Key Characteristics

Large, attractive, fragrant, pink flowers. Aromatic, small green, sour apples. Short branches ending as thorns.

Uses

As an ornamental, the flowers being very attractive and fragrant; an excellent, source of honey; apples used in preserves and making vinegar; wood can be used in turnery.

Distribution

ARKANSAS: Occurring sparingly in the mountains of the west, may grow on flat moist soils or on hillside soils that are not too steep or stony. In the southern part of Arkansas the Southern Crabapple, *Malus angustifolia* (Ait.) Michx. is the more common species. UNITED STATES: Narrow range, from Illinois through southeastern Missouri, Arkansas, and eastern Oklahoma.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

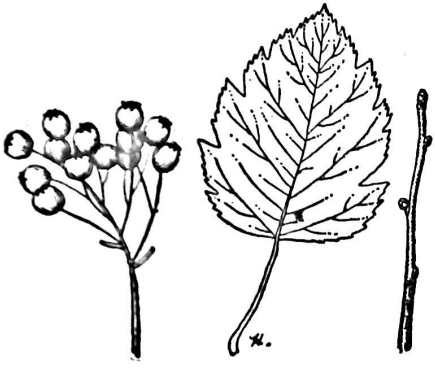
Hawthorn

(*Crataegus* species)

Local Names: Haw, Red Haw, Thorn Bush, White Haw, Blue Haw

Description

The hawthorn group is a large one and the individuals difficult to distinguish; more than 60 varieties, species, or hybrids are known to occur in Arkansas, each with its peculiar characteristics; hence any discussion of the group must be generalized. **Tree** usually occurs as an "under tree"; none are large and some almost bushlike; usually more or less thorny. **Bark** varies from smoothish to stringy, and from scaly to fissured and ridged. **Leaves** mostly oval or wedge-shaped, notched and/or toothed on edges, from 2-3 inches long. **Flowers** whitish, from ⅜ to 1 inch across, fragrant, odorless or ill-smelling. **Fruit** apple-like, varying from globular to oblong; from ¼ to ¾ inch in diameter; green, greenish red, red, or rarely blue or orange; some edible; with 1-5 seeds. **Wood** strong, tough, hard; red brown with thick, lighter colored sapwood; one species weighs 48 pounds per cubic foot.



Two-thirds natural size.

Key Characteristics

Leaves small, variously toothed, lobed, or notched. Fruits look like small apples, smooth, usually red or yellow. Branches usually have long slender thorns.

Uses

Limited; some as ornamentals; the fruits of one or two species highly prized for making jelly; some produce considerable nectar and possibly some pollen for bees. Tree is subject to apple rust.

Distribution

ARKANSAS: In wet forests of the flood plain areas; on sandy, rolling soils of the coastal plain area; and on steep, stony slopes of mountains. ELSEWHERE: Often common in pastures and abandoned fields.

Largest Specimens on Record

ARKANSAS: Circumference 2 feet 7 inches, dbh. 99 inches, height 39 feet, spread 15 feet 4 inches. White River Refuge. ELSEWHERE: Circumference 3 feet 7 inches, height 26 feet, spread 15 feet. Morton Grove, Ill.

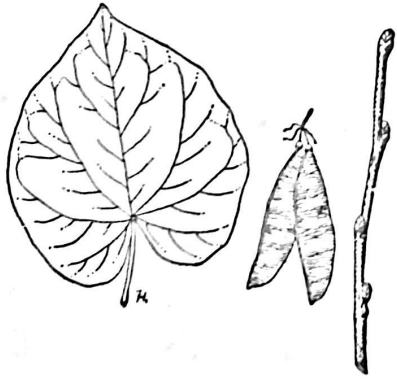
Eastern Redbud

(*Cercis canadensis* L.)

Local Names: Red Bud, Judas Tree

Description

Tree may attain height of 50 feet, usually smaller; occurs as an "under tree" with larger species; fairly easy to transplant but should be moved when tree is small and to situations in which the soil moisture is adequate. **Bark** on young branches smooth, brownish, marked with evident light lenticels; on trunk bright red brown or brown, surface divided by deep longitudinal fissures into narrow plates, becoming somewhat scaly. **Leaves** distinctly heart-shaped with smooth or slightly wavy margins; 3-5 inches long; glossy green turning bright, clear yellow in autumn. **Flowers** resembling those of the pea or bean, appearing before the leaves in early spring; bright purplish or rose red, in clusters along twigs and even large branches. **Fruit** an oblong, flattened, many-seeded pod; 2-3 inches long; reddish during summer, turning black and often hanging on tree most of winter. **Wood** moderately heavy (40 pounds per cubic foot), hard, not strong, close-grained; rich dark brown tinged with red with thin, lighter colored sapwood.



Leaf, one-half natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves heart-shaped. Clusters of bright purplish red, pea-shaped flowers appearing before leaves in early spring. Fruits small reddish brown pods, 2-3 inches long, often persisting into winter.

Uses

Planted as an ornamental because of its profuse purplish red or rose-colored flowers in early spring; wood of little commercial importance.

Distribution

ARKANSAS: Fairly common throughout state except in overflow areas of larger rivers; probably most common in hilly and mountainous parts; at its best in gulleys, coves, and on moist, north-facing, preferably calcareous slopes. ELSEWHERE: New Jersey to southern Michigan and Iowa, south through eastern Oklahoma to eastern Texas, east to northern Florida.

Largest Specimens on Record

ARKANSAS: Circumference 3 feet 1 inch, dbh. 11.6 inches, height 25 feet, spread 25 feet. Malvern. ELSEWHERE: Circumference 9 feet 2 inches, height 36 feet, spread 39 feet. Charleston, Mo. (Jefferson City).

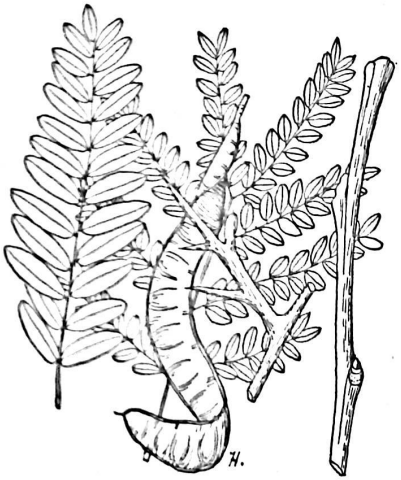
Honeylocust

(*Gleditsia triacanthos* L.)

Local Names: Sweet Locust, Thorn Locust, Thorn Tree

Description

Tree may attain height of 90 feet in well-stocked stands. **Bark** dark and smooth on young branches; on trunks dark gray brown and divided into thin, tight scales. **Leaves** compound, 18-28 leaflets arranged on a common petiole or stalk, or doubly compound with 4-7 pairs of secondary leaflets on a common stalk. **Flowers** usually of two kinds on separate trees; small inconspicuous, green and greenish white; many or few to a stalk; appearing in June. **Fruit** a pod, 8-15 inches long, flat, dark reddish brown, containing large oval seeds and yellowish pulp when ripe. **Wood** hard, strong, coarse-grained; red or bright red brown with thin pale sapwood; weight 44 pounds per cubic foot.



Leaf, one-quarter natural size.
Twig, three-quarters natural size.

Key Characteristics

Doubly compound leaves, with very small leaflets. Long, flat, curved, or curled pods. Strong, branched thorns, straight, brown, sharp, and shiny, growing on one-year-old wood and remaining for many years, often dense on old trunks; one variety (var. *inermis*) entirely free of thorns.

Uses

Fence posts, crossties, hubs, fuel, molding, construction; a good producer of nectar.

Distribution

ARKANSAS: Throughout the state in a variety of habitats ranging from wet overflow sites to rather dry, stony hillsides. ELSEWHERE: Middle Pennsylvania to southeastern Minnesota, south to middle Texas, east to middle Atlantic.

Largest Specimens on Record

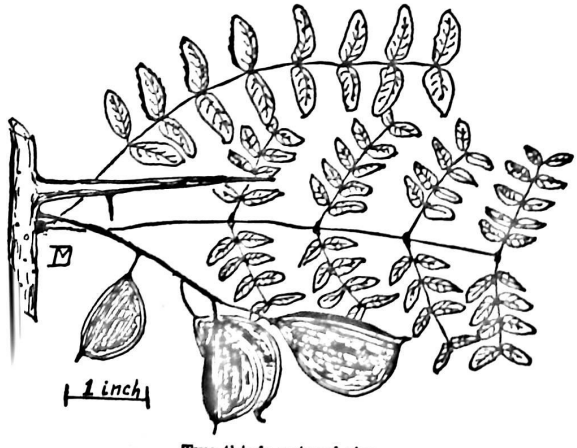
ARKANSAS: Circumference 12 feet 4 inches, dbh. 46.95 inches, height 136 feet, spread 62 feet. Clarendon, near White River. ELSEWHERE: Circumference 12 feet 4 inches, height 120 feet, spread 82 feet. Chambersburg, Pa.

Waterlocust

(*Gleditsia aquatica* Marsh.)

Description

Tree usually 40-50 feet high, diameter up to 2 feet. **Branching:** The short trunk usually divides a few feet above ground terminating in a wide, irregular, flat-topped crown. **Bark** smooth, reddish brown or dull gray, broken into small plate-like scales on older parts. **Leaves** deciduous in autumn, 3-8 inches long, borne on knotty spurs; bipinnately compound, 12-22 leaflets, each ½ to 1 inch long and ¼ to ½ inch wide; ovate-oblong, margin slightly rounded, toothed or entire below the middle; smooth, dull yellow green and shiny above, dark green beneath. **Flowers** similar to those of honeylocust. **Fruit** a thin pod, 1½-3½ inches long, often about 1 inch in width; long-stalked, without pulp; valves thin, tough, papery; bright chestnut brown; containing 1 or rarely 2 or 3 seeds. **Wood** similar to that of honeylocust (46 pounds per cubic foot.)



Two-thirds natural size.

Key Characteristics

Twigs dark gray; armed with slender, sharp, often branched thorns. Very similar to honeylocust but pods short, usually with only 1 seed; leaves more often only once-pinnate.

Uses

Similar to honeylocust.

Distribution

ARKANSAS: Common in overflow lands, associated with water tupelo, swamp cottonwood, planertree, and swamp privet. UNITED STATES: Coastal region from North Carolina to Florida and Texas, and up the Mississippi valley to Missouri and Illinois.

Largest Specimens on Record

ARKANSAS: Circumference 4 feet, dbh. 15.4 inches, height 47 feet, spread 22 feet. White River Refuge. ELSEWHERE: Circumference 7 feet 7 inches, height 60 feet, spread 80 feet. Wyndmoor, Pa.

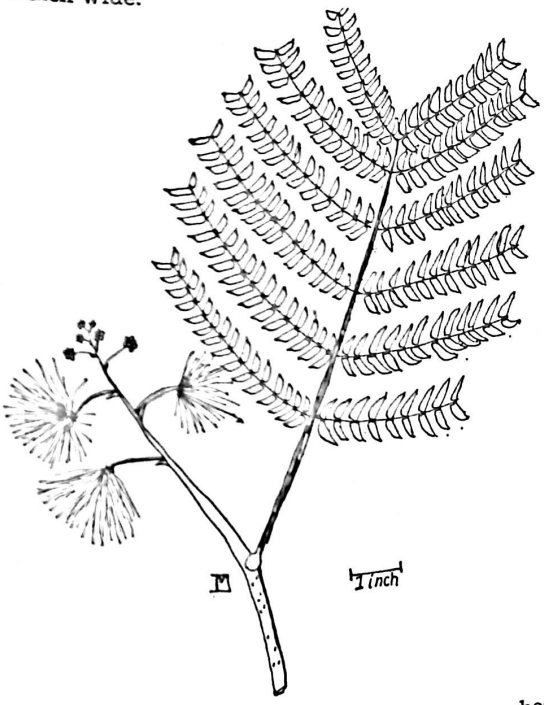
Silktree

(*Albizia julibrissin* Durazz.)

Other Common Name: Mimosa

Description

Tree small flat-topped up to 40 feet and in much of the summer covered with pink, fluffy blossoms. **Bark** light brown to gray brown, blotched. **Leaves** alternate, doubly even-pinnate with 8-10 pairs of opposite pinnae each with 10-25 pairs of opposite one-sided leaflets about ⅜ inch long, whole leaf 8-15 inches long, dull green. **Flowers** very small in globular clusters with many prominent, extended, pink stamens, giving them a "pompom" effect. **Fruit** flat legumes 6-8 inches long, nearly 1 inch wide.



Key Characteristics

The soft green fern-like leaves, spreading branches, and in season, the masses of pink blossoms.

Uses

Ornamental and shade.

Distribution

Widespread as an ornamental in eastern and southern United States, escaping freely from cultivation. Native to Persia to central China. Introduced in United States in 1745.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 6 feet 7 inches, height 60 feet, spread 77 feet. Philadelphia, Pa.

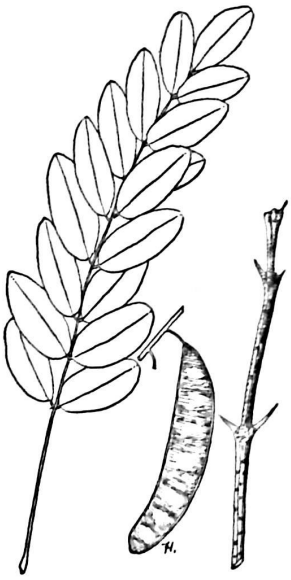
Black Locust

(*Robinia pseudoacacia* L.)

Local Names: Locust; Yellow, White, Red and Green Locust; False Acacia

Description

Tree often attains height of 80 feet and diameter of 3 feet in Appalachian Mountains, which may be equalled by trees growing in favorable sites in this state. **Bark** on young branches brown or greenish brown; on old trunks thick, deeply furrowed, dark or gray brown. **Leaves** compound with 7-19 oblong, thin, oval leaflets arranged on a common stalk; entire leaf 6-10 inches long. **Flowers** fragrant, pea-like, white or cream colored, several occurring on a drooping stalk, appearing in April before or with the leaves. **Fruit** a flattened pod, 3-5 inches long, tan or brown, containing 4-10 seeds, ripening in August. **Wood** heavy (49 pounds per cubic foot), hard, strong, close-grained; brown or rarely light greenish brown with pale yellow sapwood.



Leaf and Fruit, one-third natural size. Twig, two-thirds natural size.

Key Characteristics

Pinnately compound leaves. Brownish bark. Flat fruit, 3-5 inches long. Twigs and branches armed with straight or slightly curved, sharp, strong spines, sometimes nearly an inch long, borne in pairs at the nodes. Fragrant white flowers.

Uses

Fence posts, poles, insulator pins, mine props, shipbuilding, agricultural implements; tree a valuable source of nectar contributing considerably to the spring honey crop; as an ornamental.

Distribution

ARKANSAS: Statewide; may become established in groves or in reasonably thick stands in abandoned fields or in cut-over timber land. UNITED STATES: Original range probably narrow, limited to slopes of the Appalachian Mountains, with a possibility that it was native to the Crowley's Ridge region and western Arkansas and to eastern Oklahoma; has become widely scattered and naturalized from the Atlantic coast to Rocky Mountains.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 16 feet 4 inches, height 103 feet, spread 46 feet. Richmond, Mass.

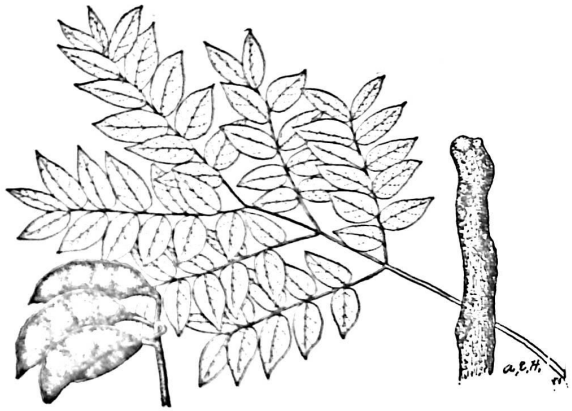
Kentucky Coffeetree

(*Gymnocladus dioicus* (L.) Koch.)

Local Names: Coffee Tree, Coffee Nut, Coffee Bean

Description

Tree may attain height of 80 feet and diameter of 3 feet or more. **Branching** coarse, with thick, irregular twigs. **Bark** fissured, dark gray tinged with red, and roughened by large, hard, persistent scales. **Leaves** may be 3 feet long; doubly compound with 5-9 pairs of leaf branches, each having 6-14 leaflets on a common stalk. **Flowers** of two kinds, usually borne on separate trees, greenish white. **Fruit** a pod, 4-8 inches long, rather thick and woody, containing large seeds imbedded in a thick layer of sweet greenish pulp which is poisonous to livestock; in winter tree may be distinguished by persistent pods. **Wood** moderately heavy (44 pounds per cubic foot), rather soft; rich light brown tinged with red with thin, lighter colored sapwood.



Leaf and Fruit, one-eighth natural size.
Twig, one-half natural size.

Key Characteristics

Doubly compound leaves with 5-9 pairs of leaf branches, each having 6-14 leaflets on a common stalk. Fruit pod 4-8 inches long, rather thick, containing large seeds, and persistent in winter. Thick, stubby branches with large leaf scars. Pith of twigs orange brown or salmon color.

Uses

Not used commercially.

Distribution

ARKANSAS: Rather uncommon but more commonly found associated with limestone; not in the delta. ELSEWHERE: Western New York to southeastern Minnesota, south to northeastern Oklahoma, east to the Appalachians, thence northeast.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 14 feet 6 inches, height 101 feet, spread 74 feet. Near Bryn Mawr, Penn.

Yellowwood

(*Cladrastis lutea* Koch.)

Description

Tree usually small but may attain height of 60 feet and diameter of 3-4 feet. **Bark** on twigs rich brown; on older branches silvery gray or light brown, smooth. **Leaves** compound, 8-12 inches long, leaflets alternate; base of petiole covers the bud. **Flowers** pea-like, white, occurring in June, similar to those of the black locust but not so fragrant. **Fruit** a small, thin, flat pod with several small seeds. **Wood** clear bright yellow, very hard and difficult to work, weight about 39 pounds per cubic foot.

Twig, two-thirds natural size.
Leaf and Fruit, one-fourth natural size.

Key Characteristics

Odd-pinnate leaves in two rows on twigs, with leaf base covering the axillary bud; no terminal bud.

Uses

As an ornamental; wood has little use except occasionally in cabinet work and inlaying.

Distribution

ARKANSAS: In mountains but not common anywhere; more likely in calcareous, rocky soil. ELSEWHERE: North Carolina to Florida, Indiana, Kentucky and Tennessee, west to Missouri and Oklahoma.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

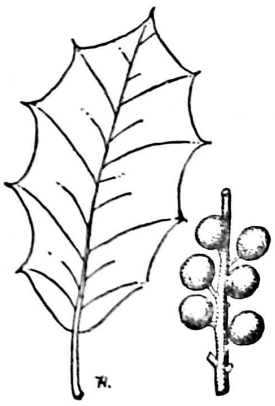
American Holly

(*Ilex opaca* Ait.)

Local Names: Holly, White and Evergreen Holly

Description

Tree often 40-50 feet high with a diameter of 1-3 feet; tree has suffered at hands of man because fruit-bearing branches are gathered at Christmas. **Branching:** Short slender branches forming a compact rounded crown. **Bark** light gray to black, sometimes rather smooth but usually roughened by wart-like growths. **Leaves** "evergreen," falling at end of the third year; oval, thick and leathery, 2-4 inches long, spiny along their margins. **Flowers** small, whitish, usually two kinds on separate trees; appear in spring. **Fruit** spherical or egg-shaped, red or occasionally yellow, about ¼ inch in diameter, containing 4-6 ribbed seeds, ripening in autumn and persisting into the winter. **Wood** not strong, close-grained; nearly white when first cut, turning brown with age and exposure, with thick, rather lighter colored sapwood; weight 40 pounds per cubic foot.



Two-thirds natural size.

Key Characteristics

Thick, oval, evergreen leaves armed with spiny teeth. Dull red fruits remaining on branches during the winter.

Uses

Valued and much used for cabinet wood and wood-turning, inlaying, engraver's blocks, shuttles, novelties; branches used for Christmas decorations; as an ornamental; a valuable source of nectar.

Distribution

ARKANSAS: Most common in south and east where it usually occurs in stream bottoms; may also be found on moist north-facing hillsides, in coves and gulleys. ELSEWHERE: Massachusetts to southern Indiana, southwest to eastern Texas, east to Florida.

Largest Specimens on Record

ARKANSAS: Circumference 8 feet 10 inches, height 45 feet. Near Hughes. ELSEWHERE: Records not available.

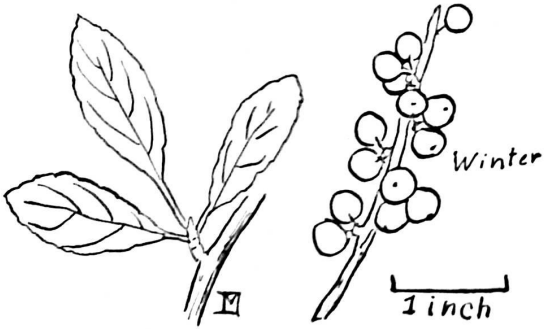
Possumhaw

(*Ilex decidua* Walt.)

Other Common Names: Deciduous Holly, Winterberry

Description

Tree 20-30 feet high, diameter 6-10 inches; more often a tall shrub with stout, spreading branches. **Branching** from the base, forming a much branched shrub. **Bark** light gray brown, roughened by wart-like outgrowths. **Leaves** deciduous in autumn; more or less spoon-shaped, apex pointed or obtuse, remotely scalloped on margins; 2-3 inches long, 1/3 to 1 inch wide; becoming thick and leathery; light green above, pale and slightly hairy beneath. **Flowers** borne on short dwarf branches. **Fruit** globular, orange or orange scarlet, ¼ inch in diameter, often remaining on branches throughout winter. **Wood** creamy white, heavy, hard, close-grained, weight about 47 pounds per cubic foot.



Key Characteristics

Gray bark. Short (1 inch) spurs on which flowers and fruit occur. Red berries crowded along branches, very evident throughout winter.

Uses

An attractive winter ornamental because of the abundant red berries.

Distribution

ARKANSAS: One of most common species of holly, found in both the bottoms along streams and in rocky mountainous sites. ELSEWHERE: Maryland to Kansas, south to Florida, Texas, and Mexico.

Largest Specimens on Record

ARKANSAS: Circumference 1 foot 7 inches, dbh. 5.5 inches, height 25 feet, spread 8 feet. White River Refuge. ELSEWHERE: Circumference 1 foot 2 inches, height 25 feet, spread 30 feet. Boggy Gut, S. C.

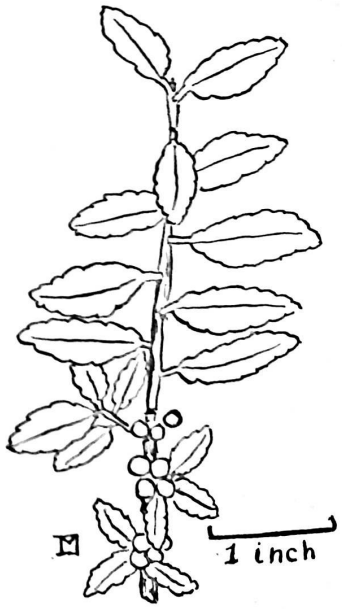
Yaupon

(*Ilex vomitoria* Ait.)

Local Name: Emetic Holly

Description

Tree 20-25 feet high, rarely more than 6 inches in diameter; generally a tall shrub with numerous stems forming dense thickets. **Bark** light red to gray brown, with thin minute scales on the surface. **Leaves** evergreen, elliptical, obtuse at the apex, round-toothed on the margins; 1-2 inches long, ¼ to 1 inch wide; dark green and shiny above, pale beneath. **Flowers** as in American holly. **Fruit** a nearly globose scarlet berry, about ¼ inch in diameter, produced in great abundance, falling soon after ripening in autumn or persisting until spring. **Wood** heavy (45 pounds per cubic foot,) hard, close-grained; nearly white, turning yellow when exposed to the air.



Key Characteristics

Small, oval evergreen leaves with scalloped edges.

Uses

Wood of no commercial value; dried young leaves have been used medicinally and as a substitute for tea; an excellent ornamental because of the persistent small spineless, dark green leaves and attractive red berries in fall and winter.

Distribution

ARKANSAS: Southern part of state. UNITED STATES: Along the Gulf coast from Florida to Texas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Hercules-Club

(*Zanthoxylum clava-herculis* L.)

Local names: Prickly Ash, Southern Prickly Ash, Toothache Tree, Tear Blanket, Sting Tongue

Description

Tree usually small, 20-30 feet high, round-headed. **Bark** thin, light gray, conspicuously roughened by corky, pyramidal or round-pointed, cone-shaped protuberances an inch or more high which often end in a stout spine. **Leaves** compound, composed of 7-17 leaflets on a prickly leaf stalk; leaflets somewhat unsymmetrical, toothed and pointed, 1-2½ inches long; lustrous green above, paler and sometimes hairy beneath. **Flowers** small, greenish, of two kinds on different trees, in branched clusters, appearing in spring when the leaves are half-grown. **Fruit** small pods containing a single black seed, borne in dense, nearly globular terminal clusters; ripening in May or June; light tan, about ¼ inch long, with a rough surface; seed black and shiny. **Wood** light (32 pounds per cubic foot), soft, close-grained, light brown with yellow sapwood.

Leaf, one-third natural size.
Fruit and twig, three-quarters natural size.

Key Characteristics

Frequently confused with the Devils-Walkingstick which is also often called Hercules-Club, but can be distinguished by its warty rather ridged bark and its singly rather than doubly compound leaves, which are smaller, usually being less than 12 inches long.

Uses

Of no commercial value; when twigs are chewed they produce first a tingling and then a numbness and insensibility to pain, thus can be used to relieve discomfort of an aching tooth.

Distribution

ARKANSAS: Chiefly in southern half, mostly on the rolling, sandy coastal plain soils. UNITED STATES: Southern Texas to southern Virginia in the vicinity of the Gulf and Atlantic coasts.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Another species of this plant, Z. *americanum* Mill., is also called **Prickly Ash.** It is much smaller, usually only a shrub, and, like the Black Locust, has pinnate leaves and *paired spines* at the base of each leaf. It differs from the Hercules-Club also by having flowers and fruits in small clusters along the sides of the branches instead of in large terminal clusters.

Ailanthus

(*Ailanthus altissima* (Mill.) Swingle)

Other Names: Tree of Heaven, Paradise tree

Description

A coarse **Tree** of rapid growth and very thick twigs. **Leaves** alternate, consisting of 5 to 20 or more paired leaflets with frequently an odd one on the end. Margins of leaflets smooth except for one or two green glandular teeth near the base. Twigs from ⅜ to ¾ inch in diameter, pith large, white. Leaf-scars large shield-shaped. The small **Flowers** in dense terminal clusters may be either male, female or both. **Fruit** a long twisted elliptical samara, up to 2 inches long and ½ inch wide with the round seed in the middle, borne in large clusters.

Key Characteristics

Leaves, many leaflets with large, green, glandular, teeth near the base; more leaflets than almost any other tree. Thick twigs, large white pith, and shield shaped leaf-scars.

Uses

Ornamental.

Distribution

Native to eastern Asia, planted as a shade tree, and now well scattered and established in many parts of the state. This is the "tree that grew in Brooklyn."

Largest Specimens on Record

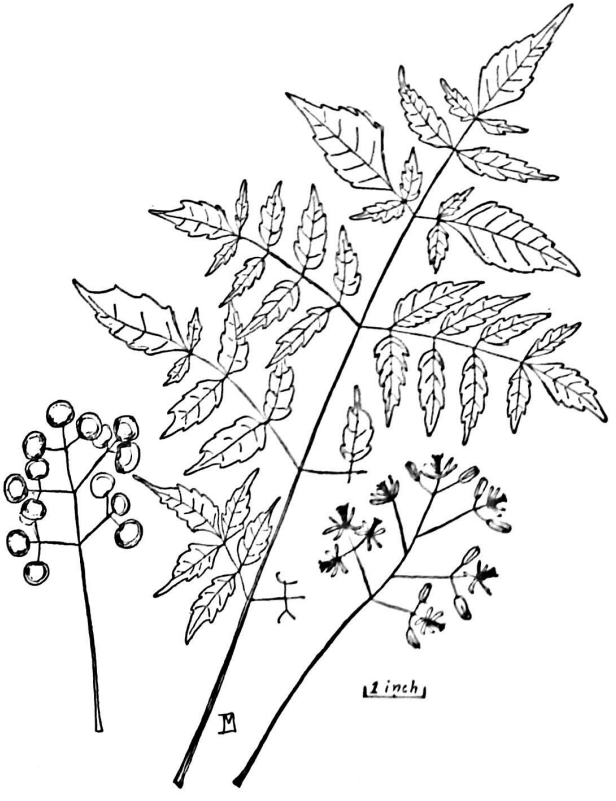
ARKANSAS: Records not available. ELSEWHERE: Records not available.

Chinaberry

(*Melia azedarach* L.)

Description

Tree moderate size. **Branching:** Sometimes a stout trunk and spreading branches (as an umbrella tree) or with innumerable branches from the base. **Bark** smooth, golden brown on young branches; darker brown, more or less scaly on older parts. **Leaves** doubly pinnately compound, up to 20 inches long, leaflets sharp-pointed with a few marginal teeth; deep green, yellowing with age. **Flowers** borne in dense clusters, lilac, five-parted, about ½ inch in diameter, fragrant. **Fruit** a yellow berry, about ½ to ⅝ inch in diameter, borne in dense clusters.



One-third natural size.

Key Characteristics

Doubly compound leaves, violet flowers, yellow berries. Branching habits.

Uses

As an ornamental.

Distribution

ARKANSAS: Has been widely planted as a shade tree in the south, and freely escaped. ELSEWHERE: Native to Asia but widely cultivated and naturalized from North Carolina to Oklahoma, south to Florida and Texas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 15 feet, height 78 feet, spread 60 feet. Crenshaw County, Ala.

Sugar Maple

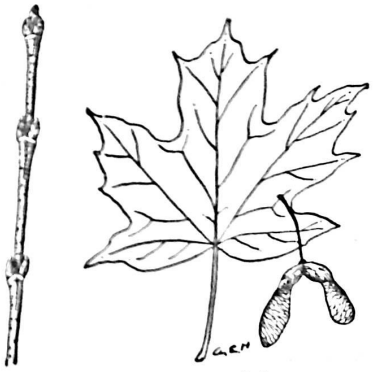
(*Acer saccharum* Marsh)

(Synonym *Acer saccharophorum* K. Koch)

Local Names: Hard, Rock, Black, and White Maple; Sugar Tree

Description

Tree may attain height of 90 feet or more and diameter of 4 feet. **Branching** usually symmetrical, making a fine shade tree. **Bark** on young branches yellow brown and smooth, becoming increasingly gray; on old trunks broken into deep longitudinal furrows, the light gray brown surface separating into large gray brown scales. **Leaves** 3-5 inches across, with three to five pointed and sparsely toothed lobes; opposite on the stem; dark green above, lighter green beneath; in autumn turning brilliant colors from yellow to orange and red. **Flowers** yellowish green, of two kinds on same or different trees, appearing in mid-March before and with the leaves in slender drooping clusters on long, thread-like stalks. **Fruit** ripens in late summer, two oval seeds, ¼ inch in diameter, with a ¾ inch "wing" attached to each. **Wood** light brown tinged with red, hard, close-grained, moderately heavy (44 pounds per cubic foot.)



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Opposite, palmately veined and lobed leaves; indentations between lobes with rounded bottoms (U-shaped) which distinguishes tree from the soft maples.

Uses

Valuable for choice flooring, furniture, veneer; widely planted for its shade and gay autumnal color; sap contains fair percentage of sugar and is gathered in late winter to make maple syrup and sugar.

Distribution

ARKANSAS: Most abundantly in the mountains and on Crowley's Ridge, best represented north of the Arkansas River; a tree of coves, ravines, and moist north-, east- and west-facing slopes; usually associated with white, chinkapin, and northern red oaks; shagbark hickory, and occasionally beech. ELSEWHERE: Southern Newfoundland through southern Quebec, along north shore of Lake Superior to Minnesota; south through eastern South Dakota, eastern Kansas and Oklahoma, and eastern Texas; east to northern Georgia.

Largest Specimens on Record

ARKANSAS: Circumference 6 feet 5 inches. Harrison.
ELSEWHERE: Records not available.

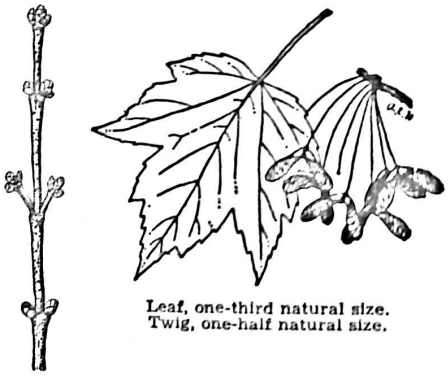
Red Maple

(*Acer rubrum* L.)

Local Names: Swamp, Soft, Water, and White Maple

Description

Tree may attain height of 100 feet or more and diameter of 3 feet or more in favorable sites but in mountainous regions usually smaller. **Bark** on young twigs smooth and light gray, becoming gray or reddish brown, furrowed, with thin scales. **Leaves** opposite on stem, three- or five-lobed, lobes pointed and entire leaf margin coarsely toothed; indentations between lobes have V-shaped bottoms; light green above and whitish beneath; hairy at first becoming smoothish; turning yellow orange or red in autumn. **Flowers** of two kinds on the same or different trees, appearing in February or March before the leaves, in dense clusters, red. **Fruit** a pair of winged seeds, 1 to 1½ inches long; on long drooping stems 3-4 inches long; ripen and fall in March or April. The brilliant red fruits and stalks make the trees stand out strikingly in March and April before leaves appear. **Wood** medium (38 pounds per cubic foot), soft, pale yellow brown.



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Leaves usually three-lobed, the middle lobe often longer than the others; margins irregularly doubly serrate or toothed; indentations between lobes V-shaped. Twigs dark red, shiny, odorless. Winter buds small, red, and round or blunt-pointed.

Uses

Furniture, turney, woodenware, fuel, veneer, crates, boxes, flooring, slack cooperage, interior finish, novelties; occasionally sugar is made from the sap; valuable as a source of nectar and pollen in very early spring stimulation of bees.

Distribution

ARKANSAS: Widely distributed; in mountains occurs in sheltered coves, ravines, and on moist, north-facing slopes; associated with sugar maple; white, chinkapin, and northern red oaks; and shagbark hickory; occurs also in small stream bottoms and second terraces associated with water oak and gums. ELSEWHERE: Newfoundland to southern Florida, west to eastern Texas, north through eastern Oklahoma to northwestern Minnesota, thence east.

Largest Specimens on Record

ARKANSAS: Circumference 13 feet 7 inches, height 72 feet, spread 42 feet. Pine Bluff Arsenal. ELSEWHERE: Circumference 16 feet 3 inches, height 125 feet, spread 108 feet. Armada, Michigan.

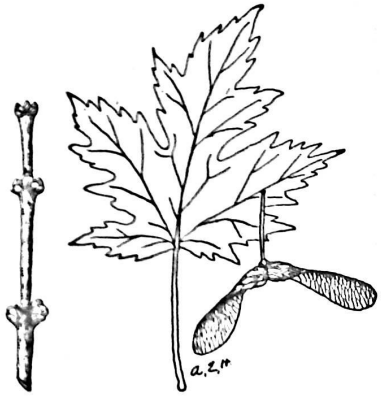
Silver Maple

(*Acer saccharinum* L.)

Local Names: Soft, River, White, Water, and Silver-Leaved Maple

Description

Tree may exceed 100 feet in height in well-stocked stands in favorable sites; in open situations may have a diameter of 4 feet or more although lower and more spreading; considered a fast growing and short-lived tree but makes a satisfactory shade or decorative tree. **Branching:** Wide spreading, thus susceptible to breakage in storms and sleet. **Bark** on young branches smooth, often shiny, reddish to yellowish gray; on old trunks dark gray, broken into loose, long flakes or scales, distinguishing tree from other maples. **Leaves** opposite on stem, usually with five (sometimes three) coarsely toothed lobes separated by deep indentations that are widely V-shaped at bottom; pale green above, silvery white beneath. **Flowers** of two kinds, greenish yellow or red, in dense clusters, appearing in February or March before the leaves. **Fruit** a pair of winged seeds, each 1½-2 inches long on slender, flexible, threadlike stems about 1 inch long; ripen and fall in April or May; germinate at once if conditions are favorable or else do not survive. **Wood** soft, close-grained, even-textured, pale brown with thick sapwood, weight 33 pounds per cubic foot.



Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Bark on old trunks broken into loose, long flakes or scales. Leaves with coarsely toothed lobes separated by deep indentations that are V-shaped at bottom.

Uses

About the same as red maple; sap sometimes used in manufacture of syrup and sugar; as an ornamental and shade tree.

Distribution

ARKANSAS: A tree of the lowlands; widely distributed and likely to be encountered in floodplain of all streams except small, mountainous ones. ELSEWHERE: New Brunswick to southeastern South Dakota, south through eastern Nebraska to western Louisiana, east to western Florida.

Largest Specimens on Record

ARKANSAS: Circumference 15 feet 6 inches, height 61 feet, spread 60 feet. Springtown. ELSEWHERE: Circumference 23 feet 2 inches, height 115 feet, spread 108 feet. Near Stratford, Iowa.

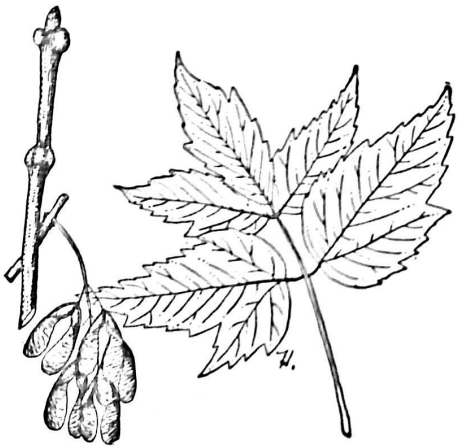
Boxelder

(*Acer negundo* L.)

Local Names: Ash Leaved and Three Leaved Maple

Description

Tree may attain height of 70 feet and diameter of 3 feet or more in favorable sites, relatively fast growing; reproduces itself readily by seeds and by sprouting under favorable conditions, but is in no sense difficult to eradicate. **Bark** on young branches bright shiny green, often purplish in winter, bitter to taste; on older trunks thin, grayish to light brown, deeply fissured. **Leaves** opposite, compound, of 3, 5, or less commonly 7 leaflets; lower leaflets more or less lobed, coarsely toothed, pointed, smooth, shiny green above and paler beneath, prominently veined. **Flowers** very small, without petals, yellow green, of two kinds on different trees, in drooping clusters; appearing just before or with unfolding of the leaves. **Fruit** a pair of almost parallel winged seeds ¾ to 1½ inches long, reaching full size in early summer but not maturing until autumn. **Wood** creamy white, soft, light (27 pounds per cubic foot.)



Leaf, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves compound, resembling those of an ash. Twigs green and shiny or bluish coated. Fruit remaining on tree until after leaves have fallen.

Uses

Wood of little value except for fuel; tree as an ornamental but very susceptible to attack of bagworms. Planted in west as windbreaks.

Distribution

ARKANSAS: Fairly common throughout state, occurring on a wide variety of soils except those very wet or very sloping, stony, and dry. More likely in small stream valleys, second terraces of larger streams, and in coves and gulleys. ELSEWHERE: Western New England to Minnesota, south to eastern Texas, east to central Florida.

Largest Specimens on Record

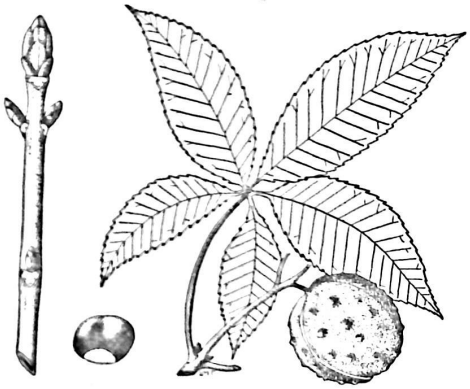
ARKANSAS: Circumference 12.06 feet, dbh 46 inches, spread 69 feet, height 67 feet, located in Cane Hill. ELSEWHERE: Records not available.

Ohio Buckeye

(*Aesculus glabra* Willd.)

Description

Tree usually small, in poor sites almost bush-like, but in small stream valleys, ravines, or on moist north slopes may attain height of 40 feet; leaves and fruit seem to be poisonous to stock and tree has been destroyed by man on that account. **Bark** on young stems scaly and light brown, on trunks ashy gray or whitish and more or less furrowed and scaly. **Leaves** compound, of five leaflets which arise from a common point, giving entire leaf the shape of a star; leaflets toothed, dull and smooth above, paler beneath; ill-smelling; turning yellow and falling in summer. **Flowers** cream colored, appearing in April or May in clusters 5-8 inches long. **Fruit** single or clustered, rounded, pale brown, thin-walled, roughened with a few spines and breaking into two or three valves, disclosing the bright chestnut colored seeds. **Wood** nearly white, weight about 28 pounds per cubic foot.



Leaf, one-quarter natural size.
Nut, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Palmately-compound, opposite leaves of 5 leaflets. Large winter buds with several pairs of opposite scales.

Uses

Tree seldom large enough for practical use.

Distribution

ARKANSAS: Most abundant in the Ozark Mountains where it is relatively common. UNITED STATES: Eastern Texas and Oklahoma, Arkansas, and southern Missouri; in northern and northeastern states, where it was once fairly common in some localities, now comparatively rare.

Largest Specimens on Record

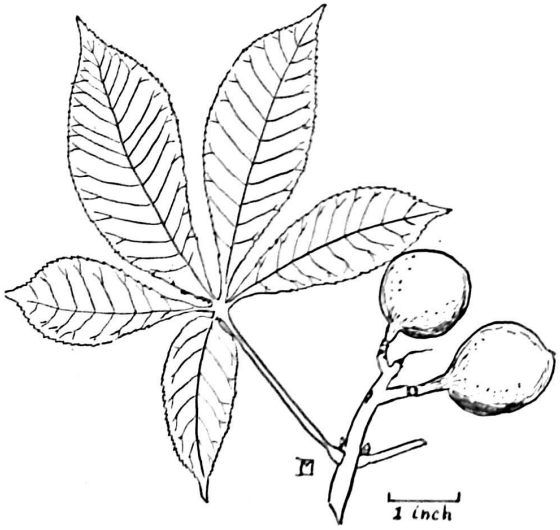
ARKANSAS: Circumference 1 foot, height 16 feet, spread 15 feet. Wooster. ELSEWHERE: Records not available.

Red Buckeye

(*Aesculus Pavia* L.)
(Synonym *Aesculus discolor* var. *mollis* (Raf.) Sarg.)

Description

Tree usually a shrub, occasionally a small tree with large, erect branches forming an open crown. **Bark** light gray brown, smooth. **Leaves** dark green above, velvety hairy beneath; of 5-7 leaflets. **Flowers** borne in clusters 6-10 inches long, bright red including both petals and calyx. **Fruit** globular, 1 to 1½ inches in diameter, light brown, usually with one or two large, light brown seeds, smooth on the surface, hanging downward on slender stems. **Wood** soft, light.



Key Characteristics

Leaves usually glossy and more often with 7 leaflets. Showy red flowers. Fruit light yellow brown, smooth, with no prickles; seed light brown.

Uses

Wood seldom large enough for use; the deep green, glossy leaves and showy red flowers make tree an attractive ornamental.

Distribution

ARKANSAS: Throughout state except in the higher Ozarks. UNITED STATES: Eastern Texas, through Arkansas and southeastern Missouri, to North Carolina and Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 3 feet 9 inches, height 33 feet, spread 30 feet. Georgetown, S. C.

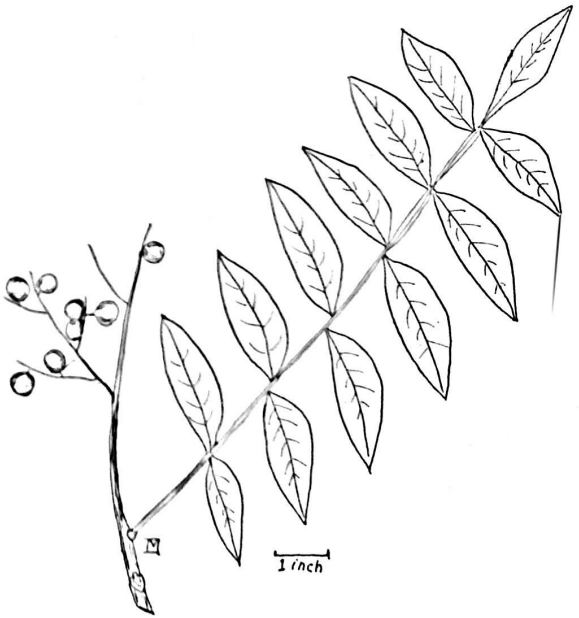
Western Soapberry

(*Sapindus drummondi* Hook. and Arn.)

Local Name: Wild Chinatree

Description

Tree relatively small, up to 40-50 feet in height and nearly 2 feet in diameter. **Branching** irregular. **Bark** light gray brown on younger branches, darker on old ones, separating by deep fissures into long narrow plates. **Leaves** pinnately compound of 9-19 leaflets; leaflets broader on upper half than lower, margins smooth; on vigorously growing leaves the central stalk may be winged. **Flowers** in terminal clusters of numerous small, white individuals, in May. **Fruit** smooth, yellow, round berries, about ½ inch in diameter. **Wood** heavy (51 pounds per cubic foot), strong, close-grained, light yellowish brown, easily split.



Key Characteristics

Pinnate leaves with curved leaflets having smooth margins. Yellow sticky berries.

Uses

Baskets for fruit and vegetables.

Distribution

ARKANSAS: Northwest, usually associated with limestone outcrops. UNITED STATES: From southwestern Missouri and adjacent Kansas across Arkansas, Oklahoma, and Texas to northern Mexico.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 6 feet 10 inches, height 66 feet, spread 55 feet. Newton County, Texas.

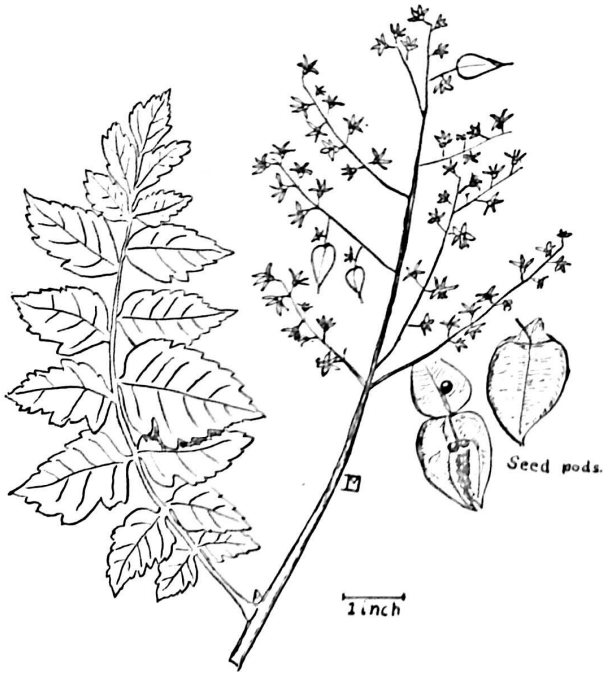
Goldenraintree

(*Koelreuteria paniculata* Laxm.)

Local Names: China-tree, Varnish tree

Description

Tree small to 30 feet, rounded crown with dark green leaves and golden yellow flowers in June. **Leaves** alternate, odd-pinnate or bipinnate, 7-15 leaflets coarsely serrate, dark green, semi-glossy, deciduous. **Flowers** small, golden yellow, borne in large loose, terminal panicles up to a foot long in June. **Fruit** bladdery loculicidal capsules with thin papery walls and bearing 3 round black seeds, lighter green than the leaves until they turn brown at maturity.



Key Characteristics

In June the large cluster of golden yellow flowers, and later the light green drooping fruits until they turn brown in late July or August.

Uses

Very attractive as an ornamental.

Distribution

Widely planted as an attractive flowering tree. Native to China, Korea and Japan. Introduced in United States in 1763.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

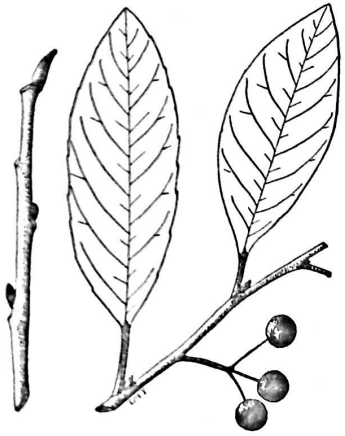
Carolina Buckthorn

(*Rhamnus caroliniana* Walt.)

Local Names: Buckthorn, Yellow Buckthorn, Indian Cherry

Description

Tree small, sometimes attaining height of 40 feet but usually smaller. **Bark** generally smooth but on older trunks may be slightly furrowed; light or ashy gray, often marked with dark blotches. **Leaves** simple, 2-6 inches long, elliptical or oblong, margins slightly toothed or smooth; dark green above and paler beneath, smooth or slightly hairy beneath, turning yellow in autumn before they fall. **Flowers** clustered or single, in the leaf axils, greenish, small, appearing when leaves are almost full grown. **Fruit** rounded, 1/3 inch diameter, first red but turning shiny black when mature, persisting on tree after leaves have fallen in autumn. **Wood** hard, light (34 pounds per cubic foot), close-grained, light brown with lighter colored sapwood.



One-half natural size.

Key Characteristics

The leaves, berries, and buds which are not scaly but tawny and fuzzy.

Uses

Desirable for decorative planting because of the bright green foliage and red to black, shiny fruit; can be used in hedge plantings; bark and fruit have cathartic properties.

Distribution

ARKANSAS: Most commonly in mountains but also to some extent in coastal plain region; in Ozark and Ouachita mountains most commonly on moist, north-facing slopes, in coves, and ravines, associated with white, chinkapin, and northern red oaks; sugar and red maples; pawpaw, and buckeye; in southern part most likely at edge of or in the valleys of small medium-sized streams. ELSEWHERE: Virginia south to Florida, west to eastern Texas, north through eastern Oklahoma to eastern Kansas, thence east.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

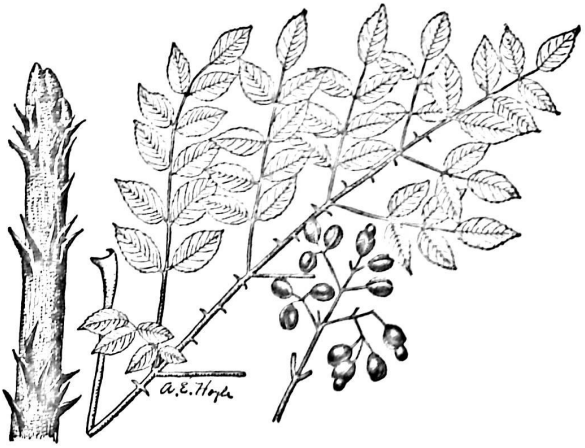
Devils Walkingstick

(*Aralia spinosa* L.)

Local Names: Hercules Club, Angelica Tree, Spikenard Tree, Tear-blanket

Description

Tree rarely exceeding 40 feet in height and 10 inches in diameter; usually found in more or less undisturbed forest as an "under tree"; extremely spiny tree often confused with the prickly ash, the short sharp spines scattered over all the branches and noticeably more crowded just below nodes. **Bark** on trunk dark brown without, yellowish within; rather thin; divided by shallow, irregular fissures into wide, rounded ridges. **Leaves** doubly or triply compound, with 9 or more secondary leaflets on each of 3-11 primary divisions, attached to a common spiny stalk; entire leaf 3-4 feet long and 2½ feet wide; with or without spines. **Flowers** clustered on a stem often 3 feet long, small, white, borne in top of tree. **Fruit** glossy black, juicy, roundish-egg shaped berries 1/6 inch in diameter. **Wood** light, close-grained, soft, brittle; brown streaked with yellow with thin, lighter colored sapwood; often a large hollow pith column occupies the center of the trunk.



Leaf, one-seventh natural size.
Twig and Fruit, two-thirds natural size.

Key Characteristics

Very thick twigs covered with many spines. Large doubly compound leaves which leave very large scars on stems when falling away.

Uses

Often planted as an ornamental, but wood of little use.

Distribution

ARKANSAS: Scattered throughout state except in steep, sloping, rocky, dry, or frequently overflowed situations. ELSEWHERE: Pennsylvania through southern Indiana to southeastern Iowa, south to eastern Texas, east to Florida.

Largest Specimens on Record

ARKANSAS: Circumference 1 foot 2 inches, dbh. 4½ inches, height 20 feet, spread 18 feet. Little Rock. ELSEWHERE: Records not available.

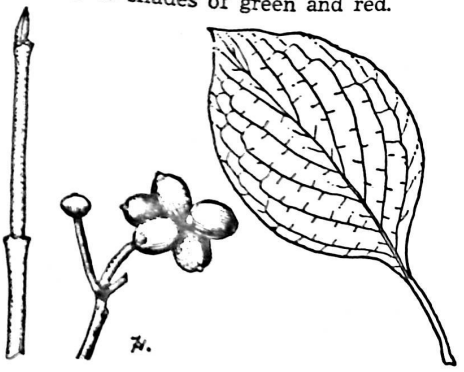
Flowering Dogwood

(*Cornus florida* L.)

Local Names: Dogwood, Cornel, Arrow Wood

Description

Tree attains maximum height of about 40 feet with favorable soil conditions; in mountains likely to be less than 25 feet; branches rather horizontal. **Bark** on young branches smooth and usually dull green or reddish; on old trunks grayish brown to black and conspicuously broken into small, four-sided, scaly blocks. **Leaves** simple, opposite each other on stem, ovate, 3-5 inches long, pointed, margins smooth or slightly wavy, bright green or grayish beneath, turning red in the fall, lateral veins curving upward toward tip. **Flowers** very small, greenish yellow, arranged in a dense cluster surrounded by four large, showy, white or rarely pinkish petal-like bracts which give the floral cluster the appearance of a large (2-4 inches across) single flower. **Fruit** a bright scarlet "berry," ½ inch long, containing a hard "pit" in which are two seeds; fruits usually in clusters. **Wood** very heavy (51 pounds per cubic foot), hard, close-grained; brown, sometimes changing to shades of green and red.



Leaf, one-half natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves opposite, the lateral veins not ending in the margins but curving upward toward the tip. Characteristic flower clusters with four petal-like bracts. Compact clusters of red "berries." Bark as described above. Characteristic winter buds.

Uses

One of our most ornamental native trees; wood in great demand for shuttles, turnery handles and forms, pulleys, malletheads, golf stick heads, engraver's blocks.

Distribution

ARKANSAS: Common throughout state occurring in a wide range of habitats; in mountainous regions most common and grows larger in little disturbed forests, coves, ravines, and on moist, north-facing slopes; in south common in the oak-hickory-gum-pine forests on rolling sandy or flat silty soils. ELSEWHERE: Southern Maine through northern Illinois to southeastern Kansas, south to middle southern Texas, east to central Florida.

Largest Specimens on Record

ARKANSAS: Circumference 6 feet 6.6 inches, dbh 2 feet, 1 inch, height 23 feet; spread 29 feet. Located on the Markham Place, Fayetteville, Ark. ELSEWHERE: Circumference 5 feet 1 inch, height 50 feet, spread 44 feet. Tallahassee, Florida.

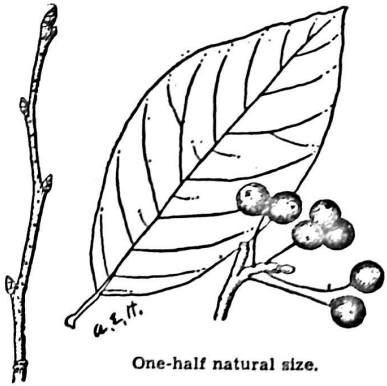
Blackgum

(*Nyssa sylvatica* Marsh.)

Local Names: Black Tupelo, Sour and Tupelo Gum, Gum Tree, Pepperidge

Description

Tree may attain height exceeding 100 feet and diameter of 5 feet or more in favorable sites; in mountains a smaller, much inferior tree soon becoming diseased, hollow, and dead ("stag-headed") at top; branches usually short, horizontal. **Bark** on younger trees furrowed between flat ridges, rather thick, light brown gray; on older trees becoming broken into quadrangular blocks that are dense, hard, gray or nearly black, of a distinctive character. **Leaves** alternate, oval, somewhat pointed, smooth margins or with a few coarse teeth; shiny and dark green, turning red or purple in early autumn. **Flowers** of two kinds on same or different trees; small greenish, in long-stemmed clusters; appearing when leaves are one-third grown. **Fruit** a dark blue, fleshy berry, in clusters of two or three on 2-inch stems; the berry 1/2 to 2/3 inch long, containing a single hard-shelled seed. **Wood** medium heavy (35 pounds per cubic foot), soft, strong, tough, not durable; light yellow with thick, lighter colored sapwood.



One-half natural size.

Key Characteristics

Tree often easily recognized in winter or summer by its narrow, cylindrical shape and the distinct, horizontal or drooping habit of the short branches. The characteristic "alligator" bark on older trees. Leaves oval to ovate, shiny above, turning brilliant red early in autumn.

Uses

Crate and basket veneers, box shooks, rollers, mallets, pulpwood, fuel, furniture, interior trim; in southern half of state a source of a substantial part of the spring honey crop; sometimes used as an ornamental.

Distribution

ARKANSAS: In a wide range of habitats; common in more moist situations of mountainous areas; in south and east common in upper overflow land around lakes, streams, swamps, bayous, associated with water hickories and water oaks. ELSEWHERE: Maine west to southern Michigan; south through the Wabash Valley, southeastern Missouri, and eastern Oklahoma to mid-southern Texas, thence east to northern Florida.

Largest Specimens on Record

ARKANSAS: Circumference 14 feet 9 inches. Malvern. ELSEWHERE: Circumference 16 feet 7 inches, height 117 feet, spread 69 feet. Harrison County, Texas.

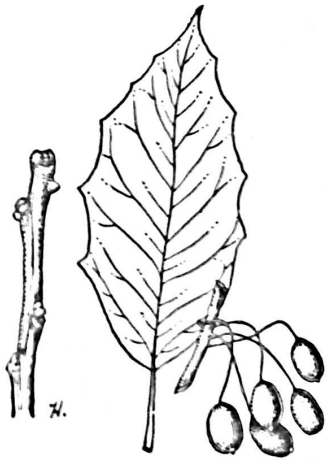
Water Tupelo

(*Nyssa aquatica* L.)

Local Names: Sour, Cotton, Black, Yellow, and White Gum

Description

Tree may attain height of 100 feet or more and diameter of 4-5 feet; tending to have a swollen buttressed base when growing in water, which is its common habitat. **Bark** on large trunks rather thick, dark brown or dark gray brown, with deep longitudinal fissures roughened on the surface by small scales. **Leaves** ovate or oblong, sharp, sometimes long-pointed; generally larger than leaves of the black gum, being 5-9 inches long; somewhat wedge-shaped at base; a few coarse teeth along margins; turning red or purple in autumn. **Flowers** of two kinds borne on same or different trees in March or April; small, greenish; male in dense round clusters, female singly at end of long slender stalks. **Fruit** a so-called "plum," plum- or olive-shaped, about 1 inch long; dark purple with a thick, tough skin enclosing a flattened stone; borne on a slender stalk 3-4 inches long; ripening in early fall. **Wood** medium heavy (35 pounds per cubic foot), soft, close-grained, difficult to split, light brown or nearly white, much like that of sweet gum and black gum.



Leaf, one-third natural size.
Twig, two-thirds natural size.

Key Characteristics

Leaves rather large with a few coarse teeth on margins very pale beneath. Base of tree commonly enlarged. Large fruit or "plum" hanging on a long stalk. Brittle twigs.

Uses

Woodenware, broom handles, fruit and vegetable packages, pulp, box boards, interior trim, cigar boxes; quite valuable for honey in southern part of state.

Distribution

ARKANSAS: Common in bayous and overflow land of southeastern half of state, associated with baldcypress, water oaks, water locust, swamp cottonwood, and water hickory. UNITED STATES: Southern Virginia west to southern Illinois omitting the mountains, south through eastern Missouri and Arkansas to mid-southern Texas, east to northern Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 27 feet 1 inch, height 105 feet, spread 45 feet. Kinder, La.

Tree Sparkleberry

(*Vaccinium arboreum* Marsh.)

Local Names: Farkleberry, Tree Huckleberry

Description

Tree small to 30 feet, but more often only a shrub. Also called Winter Huckleberry. **Bark** gray to gray-brown, shredding with age. **Leaves** simple, alternate 1-3 inches long, up to 1 inch wide, oval, obovate or elliptical, margins entire; rounded or acute at the apex; semi-evergreen. **Flowers** bell-shaped, about ½ inch long, pendant, in leafy-bracted recemes, white or pinkish, 5-lobed. **Fruit** globose, black, shiny berries, mealy, dry, long-stalked, ripening late in the fall or in winter, hence the name "Winter Huckleberry."

Uses

The berries furnish some food for birds in winter. The Farkleberry gained some publicity during the administration of Governor Orval Faubus, when someone questioned his use of the name Farkleberry.

Distribution

Southern and southeastern United States, most commonly in the mountainous areas.

Largest Specimens on Record

ARKANSAS: Circumference 1 foot 8 inches, height 25 feet, spread 14 feet. East of Fordyce. ELSEWHERE: Circumference 2 feet, height 28 feet, spread 24 feet. North of Tallahassee, Florida.

Common Persimmon

(*Diospyros virginiana* L.)

Local Names: Persimmon, Possum Wood

Description

Tree small, rarely exceeding 50 feet in height and 18 inches in diameter. **Branching:** Branches spreading, forming a broad- or narrow-topped crown. **Bark** on old trees almost black; separated into thick, nearly square blocks, "alligator" bark. **Leaves** oval or oblong, short, sharp-pointed, margins smooth or slightly wavy, 4-6 inches long; dark green and shiny above, paler beneath. **Flowers** of two kinds on different trees, yellowish or creamy white, somewhat bell-shaped, four-lobed, appearing in May. **Fruit** round, pulpy, orange or brown; containing hard, smooth, brownish seeds; strongly astringent while green but usually sweet and edible when thoroughly ripe. **Wood** very heavy (52 pounds per cubic foot), strong, heart-wood dark brown or sometimes nearly black in old trees, having characteristics in common with ebony.

Leaf, one-half natural size.
Twig, three-quarters natural size.

Key Characteristics

Globular, pulpy, orange, edible fruits about 1 inch or more in diameter. Dark gray to almost black bark separated into thick, nearly square blocks, much like black gum. Twigs usually hairy, grayish. Buds short, conical, almost black.

Uses

Very valuable for shuttles, golf club heads, shoelasts, billiard cues, brush backs, novelties; fruit edible; source of nectar nearly all over state.

Distribution

ARKANSAS: One of the pioneers on cut-over land or abandoned fields in much of state; common, occurring in a wide variety of habitats; at its best in terraces of larger streams and the first bottoms of the Mississippi where it may attain height of 70 feet or more. ELSEWHERE: Southern New England to southeastern Iowa, south through eastern Kansas and Oklahoma to western Texas, east to southern Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 11 feet 5 inches, height 51 feet, spread 54 feet. Waterproof, La.

Silverbell

(*Halesia carolina* Ellis.)

Description

Tree small up to 40 feet, upright branches, but spreading in the open. **Bark** light brown to reddish-brown, becoming graybrown with reddish brown intervals. **Leaves** simple, alternate, deciduous, ovate to ovate-elliptical, apex usually acuminate, rounded or tapering at the base, finely serrate, dark green above, lighter beneath. **Flowers** white or greenish white, or occasionally pinkish, bell-shaped, 4-lobed, about 1 inch long, in clusters of 2-6 on twigs of the previous season, usually in April before or with the appearance of new leaves. **Fruit** a dry 4-winged structure about 1-1½ inches long, terminated by the hardened remains of the style. They may hang on late into winter. **Wood** reddish-brown, close-grained, medium heavy.

Key Characteristics

The white bell-shaped flowers in April and the 4-winged fruits the remainder of the year.

Uses

Ornamental, relatively free from insect pests.

Distribution

Along streams and in the mountains on moist slopes; elsewhere in adjacent Oklahoma, Texas, Louisiana and eastward to Virginia.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 11 feet 1 inch, height 50 feet, spread 52 feet. Wyndmoor, Pa.

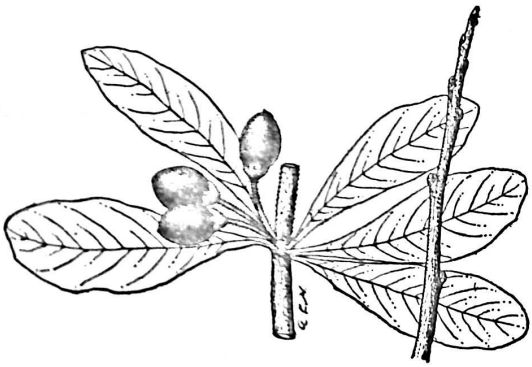
Gum Bumelia

(*Bumelia lanuginosa* (Michx.) Pers.)

Local Names: Wooly Buckthorn, Gum Elastic, Chittimwood, False Buckthorn

Description

Tree small, never exceeding 40 feet in height and 16 inches in diameter. **Bark** gray or dark brown gray, divided into narrow irregular ridges and covered with scales. **Leaves** 1½-2½ inches long, narrow, broader and rounded at tip, gradually narrowed toward base; coated at first, as are the young twigs, with numerous rusty hairs; later becoming smooth, shiny and dark green above although they may remain hairy beneath; often clustered on short spurs, particularly early in the season, giving a whorled effect; branches may or may not be spiny. **Flowers** small, white, with united petals, occurring in summer. **Fruit** berry-like on short slender stalks, black, fleshy, about ½ inch long, with one large seed. **Wood** heavy (41 pounds per cubic foot), rather soft, not strong, close-grained; light brown or yellow with thick, lighter colored sapwood.



Three-quarters natural size.

Key Characteristics

Leaves wedge-shaped, rounded at tips; tawny hairs on undersides and on twigs. Thorns commonly ½ inch long or longer.

Uses

No commercial value.

Distribution

ARKANSAS: In a variety of habitats but mostly in south and west; in southern part on overflow area in extreme southeast and also in pine or oak-hickory-gum-pine woods elsewhere; in mountains of western part on very steep, stony, and exposed slopes. ELSEWHERE: Essentially southern, from mid-southern Illinois west through central Missouri to central Texas; east to central Alabama, southeastern Georgia, and Florida.

Largest Specimens on Record

ARKANSAS: Circumference 3 feet 1 inch, dbh. 16.6 inches, height 47 feet, spread 31 feet. DeQueen. ELSEWHERE: Records not available.

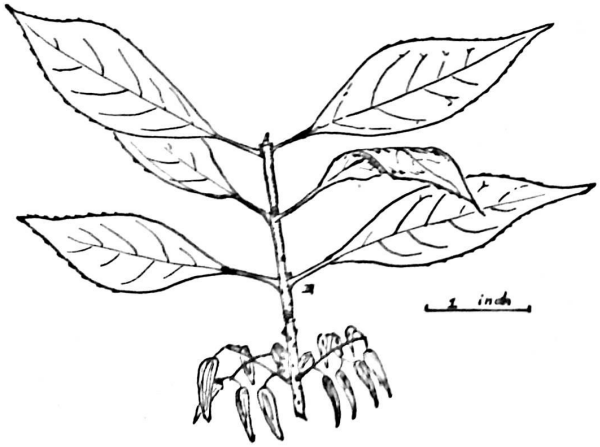
Swamp Privet

(*Forestiera acuminata* (Michx.) Poir.)

Local Names: Forestiera, Adelia

Description

Tree small, rarely over 40 feet in height; commonly bush-like. **Bark** on old trunks may be gray to gray brown, slightly rough, divided into narrow, shallow strips or flakes; usually rather smoothish and light gray, a rather conspicuous characteristic. **Leaves** simple, opposite; 2½-4 inches long, ¾-1½ inches wide; taper-pointed at both ends; yellowish green above, paler beneath; slightly toothed from middle to upper end. **Flowers** small, yellowish or yellow green, of two kinds on same tree; appearing before the leaves unfold, giving the branches a yellow appearance. **Fruit** somewhat oblong, clustered, deep purple, containing a single stony seed surrounded by tough, dry pulp; ripening in May or June and falling at that time. **Wood** soft, medium heavy (40 pounds per cubic foot), coarse-grained, yellow brown.



One-half natural size.

Key Characteristics

Bark usually rather smoothish and light gray brown. Branches covered with short clusters of yellow flowers in early spring.

Uses

No commercial use. A "pest" to the forester.

Distribution

ARKANSAS: Along streams, especially the low overflow areas of east and south; in swamps or periodic lakes may become established in extensive, almost impenetrable thickets; usually associated with button bush, willows, planertree, baldcypress, swamp cottonwood, water hickories, and water oaks. UNITED STATES: Eastern Texas north through Arkansas and Missouri to southern Illinois and southern Indiana; south through western Tennessee and Georgia to Florida.

Largest Specimens on Record

ARKANSAS: Circumference 1 foot 11 inches, dbh. 7.4 inches, height 32 feet, spread 28 feet. North Little Rock (White River Refuge). ELSEWHERE: Records not available.

White Ash

(*Fraxinus americana* L.)

Local Names: American and Cane Ash

Description

Tree may attain height of 100 feet or more and diameter of 3-4 feet under favorable conditions; in well stocked stands straight and slender and clear of limbs to a considerable height, in the open low with a rounded, spreading crown; seldom in large stands. **Bark** light gray to gray brown or darker; with narrow ridges separated by deep fissures, giving characteristic ridged appearance of ash bark. **Leaves** opposite, 8-12 inches long, compound, of 5-9 short-stalked, sharp-pointed, toothed or smooth-margined leaflets; dark green and smooth above, pale green or whitish beneath. **Flowers** of two kinds on different trees before leaves appear; male in dense reddish purple clusters, female in short, more open, drooping branches. **Fruit** winged, 1 to 1½ inches long; seed cylindrical, wing along only a third of its length. **Wood** heavy (41 pounds per cubic foot), hard, strong, close-grained but porous, tough; light brown with thick, lighter colored sapwood.

Leaf, one-third natural size.
Twig, one-half natural size.

Key Characteristics

Ashes are the only tree in eastern America, except box elder, with opposite, pinnately compound leaves. White ash has wing of fruit terminal or slightly decurrent on the body.

Uses

Wood preferred for small and long tool handles, baseball bats, boat oars, skis, other athletic equipment, agricultural implements, refrigerators, furniture, trunks, plywood, and slack cooperage; valuable timber and shade tree.

Distribution

ARKANSAS: In small stream valleys, second terraces of larger streams, coves, ravines, and on moist north-facing slopes; associated with white, chinkapin, and northern red oaks and shagbark hickory. ELSEWHERE: Nova Scotia west to eastern Minnesota; south through eastern Nebraska, Kansas, and Oklahoma to eastern Texas; east to northern Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 24 feet, height 80 feet, spread 82 feet. Glenn Mills, Pa.

Green Ash

(*Fraxinus pennsylvanica* Marsh.)

Local Name: Water Ash

Description

Tree from 40-60 feet high, 1-2 feet in diameter. **Branching:** Slender spreading branches forming a compact crown. **Bark** tinged with red, with netted fissures and ridges. **Leaves** opposite, compound of 7-9 short-stalked, smooth leaflets which are pointed at ends and toothed along margins; entire leaf 9-12 inches long; leaflets bright green or yellow green on both sides. **Flowers** similar to white ash. **Fruit** winged, wing usually narrower than on white ash; seed extremely slender with wing attached to more than half the length of the seed. **Wood** heavy (40 pounds per cubic foot); light brown with thick, lighter colored sapwood much like the white ash.

Fruit, one-half natural size.
Leaf, one-quarter natural size.
Twig, one-half natural size.

Key Characteristics

Leaflets usually narrower and more lanceolate than those of white ash, only slightly lighter green beneath than above. On young trees leaves often stand erect along upper branches. Wing on fruit narrower than on white ash, attached to more than half the length of the seed.

Uses

Similar to those of the white ash; although wood is of somewhat poorer quality, usually cut and used with that of white ash.

Distribution

ARKANSAS: In a wide variety of habitats from wet overflow land to rather dry, stony hillsides; in northern part of state found most commonly in small stream valleys. ELSEWHERE: Very wide range, from Maine west to lower slopes of Rocky Mountains, south to northern Arizona, east to western Florida, north in the Appalachians avoiding the immediate coastal region.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

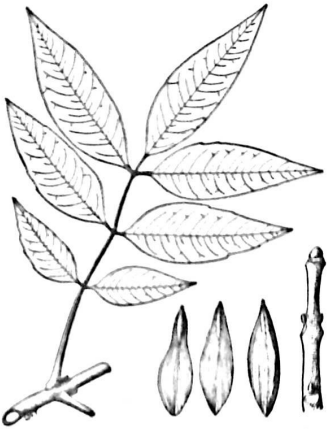
Carolina Ash

(*Fraxinus caroliniana* Mill.)

Local Names: Water Ash, Swamp Ash

Description

Tree usually small, rarely over 40 feet high; commonly found in relatively undisturbed stands as an "under tree." **Bark** differs from previously described ashes in being rather thin, and scaly instead of ridged; often marked by large, irregularly shaped, round patches. **Leaves** opposite, compound of 5-7 long-stalked, often rounded leaflets with smooth or coarsely-toothed margins, more or less hairy beneath; entire leaf 7-12 inches long. **Flowers** similar to those of white ash. **Fruit** with broad wing (½ to ¾ inch in width), frequently three- instead of two-vaned, rounded or tapered at tip, surrounding the long narrow seed at its base. **Wood** light (22 pounds per cubic foot), soft, weak, close-grained; nearly white, sometimes tinged with yellow, with thick, lighter colored sapwood.



Fruit and Twig, one-half natural size.
Leaf, one-third natural size.

Key Characteristics

Can usually be distinguished from other ashes by its habitat and its wide, paddle-shaped, winged fruit, often with 3 wings. Bark rather thin and scaly.

Uses

Of little economic importance although wood is sometimes used as that of other ashes, to which it is quite inferior.

Distribution

ARKANSAS: Found occasionally in swamps and inundated land in south; usually associated with water tupelo, baldcypress, water hickories, pumpkin ash, and water oaks, and in southeastern part of its general range with swamp bay. UNITED STATES: Distinctly southern, from Florida to central Texas in immediate Gulf region, north through Mississippi Valley to southern Arkansas.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Circumference 2 feet 5 inches, height 30 feet, spread 34 feet. Myakka River State Park, Sarasota, Florida.

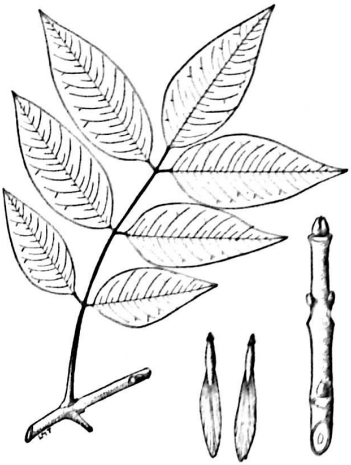
Pumpkin Ash

(*Fraxinus tomentosa* Michx. f.)
(Synonym *Fraxinus profunda* Bush.)

Local Name: Water Ash

Description

Tree may attain height of 100 feet or more and diameter of 3 feet, equalling any of its associated species in size; when submerged develops a rounded, swollen, buttressed base similar to that of such other trees as water tupelo and baldcypress although not as exaggerated as in latter species. **Bark** may resemble that of white ash or be less fissured and more scaly. **Leaves** opposite, compound of 5-9 short-stalked leaflets, leaflet margins smooth or with a few teeth; leaf stalks and robust branchlets downy, at least when young; leaflets dark green and smooth above, lighter green and usually densely velvety beneath. **Flowers** similar to those of white ash. **Fruit** ripening in September, more closely resembling that of green than white ash; slender, wing frequently notched at end and attached to one-quarter to one-half the length of the seed. **Wood** brown with lighter colored sapwood; quality inferior to that of white ash but resembling it; weight 36 pounds per cubic foot.



Fruit and Twig, one-half natural size.
Leaf, one-third natural size.

Key Characteristics

Twigs and undersides of leaves velvety.

Uses

Somewhat similar to uses of white or green ash.

Distribution

ARKANSAS: Confined to inundated areas of east, where it is associated with baldcypress, water tupelo, swamp cottonwood, and water locust. UNITED STATES: Southern Louisiana north through eastern Arkansas to southern Illinois and Indiana; south through western Kentucky, Tennessee, and eastern Mississippi to western Florida.

Largest Specimens on Record

ARKANSAS: Records not available. ELSEWHERE: Records not available.

Blue Ash

(*Fraxinus quadrangulata* Michx.)

Local Names: Winged and Square Stemmed Ash

Description

Tree medium-sized; more often associated with limestone soils. **Bark** moderately thick, more or less scaly; not ridged as are other ashes. **Leaves** similar to those of other ashes but more noticeably toothed and sharp-pointed. **Flowers** similar to those of white ash. **Fruit** broad (½ inch in diameter), winged, 1½ to 2 inches long, notched at tip. **Wood** similar to that of white ash but more brittle and almost never as large; weight 49 pounds per cubic foot.

Fruit and Twig, two-thirds natural size.
Leaf, one-third natural size.

Key Characteristics

Twigs, especially those growing vigorously, quite definitely four-angled, frequently with wings on the angles, hence the specific name. Fresh twigs, if whittled to expose wood and inner bark, will impart a bluish color to glass of clear water, if stirred in it.

Uses

Much the same as white ash.

Distribution

ARKANSAS: Commonly on slopes, ravines, and coves, associated with calcareous rocks and soils. ELSEWHERE: Ontario west through southern Michigan to southern Iowa and Missouri; to northern Oklahoma, across northern Alabama to eastern Tennessee.

Largest Specimens on Record

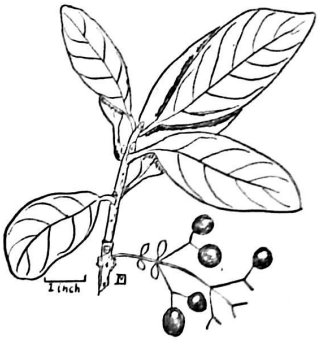
ARKANSAS: Records not available. ELSEWHERE: Records not available.

White Fringetree

(*Chionanthus virginicus* L.)

Description:

Tree a small tree or shrub to 30 feet, with glossy dark green leaves, and a profusion of attractive white flowers in May. **Bark** relatively smooth, light brown, somewhat scaly. **Leaves** simple, opposite, deciduous, oblong-ovate, oblong to narrowly elliptic, up to 8 inches long, acute or acuminate apex, wedge-shaped base, dark green and glabrous above, lighter and slightly pubescent beneath, turning yellow in the fall. **Flowers** appearing with the leaves in May, in loose axillary drooping clusters, six to eight inches long, usually with leafy bracts at the base; quite attractive. **Fruit** like a small olive, about ¾ inches long, dark blue at maturity, in November.



Uses:

Chiefly as an ornamental, the showy drooping cluster of fringy white flowers are very attractive. Cultivated since 1736.

Distribution:

In moist slopes or along streams, from New Jersey to to Florida and west to Arkansas and Texas.

Largest Specimens on Record:

ARKANSAS: Height 20 feet, spread 15 feet. Southeast Madison County at Dripping Springs, along upper Kings River. ELSEWHERE: Records not available.

Northern Catalpa

(*Catalpa speciosa* Warder)

Local Names: Catalpa, Hardy and Western Catalpa

Description

Tree rather short-lived and fast-growing; usually not exceeding 50 feet in height with a rather broad, spreading crown. **Bark** dark gray to brown, divided into narrow, shallow strips or flakes on trunks; on branches greenish gray and smooth. **Leaves** occur three at a node on robust branchlets; heart-shaped, long-stalked, 6-10 inches long. **Flowers** appear in clusters in May or June; large, white with purple and yellow markings; very attractive and fragrant. **Fruit** when present, a distinguishing feature; a slender, rounded pod, 8-16 inches long and from ⅜ to ½ inch in diameter; hanging on tree over winter and gradually splitting into two parts liberating the winged seeds; seeds 1-2 inches long, two-winged, wing tips short-fringed. **Wood** soft, weak, coarse-grained; light brown with narrow, whitish sapwood; weight 26 pounds per cubic foot.

Leaf, one-third natural size
Twig, two-thirds natural size.

Key Characteristics

Large heart-shaped leaves, three at a node. Large white flower clusters and long, slender "beans."

Uses

Fence posts, poles, interior finish; sometimes planted as a windbreak or an ornamental.

Distribution

ARKANSAS: Throughout state, which may be due largely to introduction; before time of settlement probably confined to immediate vicinity of mid-Mississippi River basin, now appearing native in many places far from its original location; occurring most commonly in or near stream valleys. UNITED STATES: Eastern Texas north through Arkansas and southeastern Missouri to southern Illinois and Indiana; southeast through western Kentucky, Tennessee; southwest to western Louisiana.

Largest Specimens on Record

ARKANSAS: Circumference 17 feet 6 inches, height 64 feet, spread 55 feet. Blytheville. ELSEWHERE: Records not available.

SOME OTHER LESS COMMON TREES AND SHRUBS, NATIVE OR INTRODUCED

Common name	Scientific name	Locality[1]
Alder	*Alnus rugosa* (Du Roi) Spreng.	Wet places
Althea, Shrubby	*Hibiscus syriacus* L.	China, India
Arborvitae, Eastern	*Thuja occidentalis* L.	N. E. states, Canada
Oriental	*Thuja orientalis* L.	China, Korea
Azalea, pink and white	*Rhododendron* species	Mountains and swamps
Bayberry	*Myrica pensylvanica* Loisel	South
Beautyberry, American (French Mulberry)	*Callicarpa americana* L.	General
Bladdernut, American	*Staphylea trifolia* L.	Shady coves
Brook Euonymus (Strawberrybush)	*Euonymus americanus* L.	General
Buttonbush	*Cephalanthus occidentalis* L.	Swamps and stream margins
Chestnut	*Castanea dentata* Borkh.	Eastern states
Chinkapin, Florida	*Castanea alnifolia* var. *floridana* Sarg.	South
Chokeberry	*Aronia arbutifolia* (L.) Ell.	South
Corkwood	*Leitneria floridana* Chapm.	East
Cypress, Arizona	*Cupressus arizonica* Greene	S. W. states and Mexico
Dogwood, Alternate-leaf	*Cornus alternifolia* L. f.	North
Roughleaf	*Cornus drummondi* C. A. Meyer	General
Elder, American	*Sambucus canadensis* L.	General
Elm,		
Rock	*Ulmus thomasi* Sarg.	North
September	*Ulmus serotina* Sarg.	Central & S. W.
Falsecypress, Lawson	*Chamaecyparis lawsoniana* Parl.	N. Pacific states
Filbert, (American Hazelnut)	*Corylus americana* Marsh	General
Groundsel Tree	*Baccharis halimifolia* L.	Southern
Hazelnut (See Filbert, American)		

[1]The part of the state where found, or the origin of introduced species.

Common name	Scientific name	Locality[1]
Hickories: Numerous varieties and hybrids occur in various parts of the state.		
Hoptree, Common (Wafer Ash)	*Ptelea trifoliata* L.	General
Horsechestnut	*Aesculus hippocastanum* L.	Balkan peninsula
Leatherwood	*Dirca palustris* L.	Northwest
Magnolia, Chinese	*Magnolia soulangeana* Soul.	Hybrid, of Chinese parents
Maple, Japanese	*Acer japonicum* Thumb.	Japan
Norway	*Acer platanoides* L.	Europe
Mountain-ash, American	*Sorbus americanus* Marsh.	N.E. states, Canada
Durand	*Quercus durandii* Buckl.	Southwest
Numerous other varieties and hybrids occur in the state.		
Pine, Eastern White	*Pinus strobus* L.	N.E. states, Canada
Jack	*Pinus banksiana* Lamb.	" "
Pitch	*Pinus rigida* Mill.	Eastern states, Canada
Ponderosa	*Pinus ponderosa* Laws.	Pacific states, Canada, Mexico
Red	*Pinus resinosa* Ait.	N.E. states, Canada
Scotch	*Pinus sylvestris* L.	Europe, Asia
Table-Mountain	*Pinus pungens* Lamb.	Eastern states
Virginia	*Pinus virginiana* Mill.	Eastern states
Poplar, Lombardy	*Populus nigra* var. *italica* Muenchh.	S. Europe
Redbay	*Persea borbonia* (L.) Spreng.	South
Russian-Olive	*Elaeagnus angustifolia* L.	Europe, Asia
Smoketree, American	*Cotinus obovatus* Raf.	North
Snowbell, Bigleaf	*Styrax grandfolia* Ait.	South
Spicebush	*Lindera benzoin* (L.) Bl.	General
Stewartia	*Stewartia malachodendron* L.	South
Strawberrybush (See Brook Euonymus)		
Sumac, Fragrant	*Rhus aromatica* Ait.	Mountains

[1]The part of the state where found, or the origin of introduced species.

Common name	Scientific name	Locality[1]
Shining (Dwarf or Mountain)	*Rhus copallina* L.	General
Smooth	*Rhus glabra* L.	General
Staghorn	*Rhus typhina* Torner	N. E. states
Sweetleaf	*Symplocos tinctoria* (Garden) L'Herit.	South
Tamarisk	*Tamarix parviflora* D.C.	Southern Europe
Trifoliate-Orange	*Poncirus trifoliata* (L.) Raf.	China, Korea
Wahoo, Eastern	*Euonymus astropurpureus* Jacq.	General
Walnut, English	*Juglans regia* L.	S. E. Europe to China
Wax Myrtle, Southern	*Myrica cerifera* L.	South
Willow, Carolina	*Salix caroliniana* Michx.	Eastern states
Pussy	*Salix discolor* Muhl.	Eastern states, Canada
Sandbar	*Salix interior* Rowlee	Scattered
Virginia	*Itea virginica* L.	South and East
Weeping	*Salix babylonica* L.	China
Witchhazel, Fall	*Hamamelis virginiana* L.	Mountains
Spring	*Hamamelis vernalis* Sarg.	Ozark region

[1]The part of the state where found, or the origin of introduced species.

INDEX TO SPECIES

Page

Acacia, False ____ 96
Acer negundo ____ 108
Acer rubrum ____ 106
Acer saccharinum ____ 107
Acer saccharophorum ____ 105
Acer saccharum ____ 105
Adelia ____ 124
Aesculus discolor ____ 110
" *glabro* ____ 109
" *pavia* ____ 110
Ailanthus ____ 103
Ailanthus altissima ____ 103
Albizia julibrissin ____ 95
Amelanchier ____ 87
American Ash ____ 125
" Basswood ____ 114
" Beech ____ 45
" Elm ____ 67
" Holly ____ 99
" Hornbeam ____ 42
" Linden ____ 114
" Planetree ____ 86
" Plum ____ 89
" Sycamore ____ 86
" Walnut ____ 32
Angelica Tree ____ 116
Apple, Crab ____ 90
" , Hedge ____ 77
Aralia spinosa ____ 116
Arkansas Banana ____ 83
Arkansas Oak ____ 62
Arrowwood ____ 117
Ash, American ____ 125
" , Blue ____ 129
" , Cane ____ 125
" , Carolina ____ 127
" , Green ____ 126
" , Prickly ____ 102
" , Pumpkin ____ 128
" , Swamp ____ 127
" , Water ____ 126, 127, 128
" , White ____ 125
" , Winged ____ 129
Ash-leaved Maple ____ 108
Ashe Juniper ____ 26
Asimina triloba ____ 83
Baldcypress ____ 24
Basswood ____ 114
Bay ____ 80

Page

Beech ____ 45
" , Blue ____ 42
" , Carolina ____ 45
" , Water ____ 42
Betula nigra ____ 44
B. I. definition ____ 8
Big Bud Hickory ____ 40
Bigleaf Shagbark ____ 39
Big Shellbark ____ 39
Birch, Black ____ 44
" , Red ____ 44
" , River ____ 44
" , Water ____ 44
Bitternut Hickory ____ 37
Bitter Pecan ____ 35
Black Birch ____ 44
Black Cherry ____ 88
Blackgum ____ 118
Blackhaw, Rusty ____ 133
Blackhaw, Southern ____ 133
Black Hickory ____ 41
Black Locust ____ 88
Black Oak ____ 57
Black Tupelo ____ 118
Black Turpentine Beetle 4
Black Walnut ____ 32
Black Willow ____ 31
Blasted Pecan ____ 36
Blue Ash ____ 129
Blue Beech ____ 42
Bois d'arc ____ 77
Bottle Tree ____ 115
Bottom Shellbark ____ 39
Bow Wood ____ 77
Boxelder ____ 108
Broussonetia Papyrifera 76
Buckeye, Ohio ____ 109
Buckeye, Red ____ 110
Buckthorn, Carolina ____ 115
" , False ____ 123
" , Wooly ____ 123
" , Yellow ____ 113

Page

Bull Nut 40
Bumelia, Gum 123
Bumelia lanuginosa 123
Butternut 33
Buttonball Tree 86
Buttonwood 86
Carolina Beech 45
Carolina Buckthorn 113
Caroliniana 45
Carpinus caroliniana 42
Carya aquatica 35
" *cordiformis* 37
" *illinoensis* 34
" *laciniosa* 39
" *myristicaeformis* 36
" *ovata* 38
" *texana* 41
" *tomentosa* 40
Castanea ozarkensis 46
Catalpa, Northern 131
Catalpa speciosa 131
Cedar, Eastern Red 25
Cedar, Ozark White 26
Cedar, Red 25
Cedar, Yellow 26
Celtis laevigata 74
" *occidentalis* 73
Cercis canadensis 92
Cherry, Black 88
" , Indian 113
" , Wild 88
Cherrybark Oak 56
Chestnut Blight 4
Chinaberry 104
China-tree 112
Chinatree, Wild 111
Chinese Parasoltree 115
Chinkapin 46
Chinkapin Oak 52
Chinquapin 46
Chionanthus virginicus 130
Chittimwood 123
Cladrastis lutea 98
Coffee Bean 97
Coffee Nut 97
Coffeetree 97

Page

Cork Elm 69, 70
Cornel 117
Cornus florida 117
Cottonwood, Eastern 28
" , Southern 28
" , Swamp 29
Crabapple 90
Crataegus spp. 91
Cucumbertree 78
Custard Apple 83
Cypress, Bald 24
Dbh., definition 8
Deciduous Holly 100
Devils Walkingstick 116
Diospyros virginiana 121
Dogwood, Flowering 117
Downy Serviceberry 87
Dutch Elm Disease 4
Eastern Cottonwood 28
" Hophornbeam 43
" Poplar 28
" Redbud 92
" Redcedar 25
Elm, American 67
" , Cedar 70
" , Cork 69, 70
" , Red 68
" , Siberian 71
" , Slippery 68
" , Small-leaved 70
" , Water 72
" , White 67
" , Winged 69
Empress tree 132
Fagus grandifolia 45
Fall Webworm 4
False Acacia 96
Farkleberry 120
Firmiana platanifolia 115
Flowering Dogwood 117
Forestiera acuminata 124
Fraxinus, americana 125
" , *caroliniana* 127
" , *pennsylvanica* 126
" , *profunda* 128
" , *quadrangulata* 129
" , *tomentosa* 128
Fringetree 130

Page

Ginkgo biloba ____ 27
Ginkgo, Maidenhair tree 27
Gleditsia aquatica ____ 94
" *triacanthos* ____ 93
Goldenraintree ____ 112
Gum, Black ____ 118
Gum Bumelia ____ 123
Gum Elastic ____ 123
Gum, Red ____ 85
" , Sap ____ 85
" , Sweet ____ 85
" , Sour ____ 118, 119
" , Tupelo ____ 118
" , Yellow ____ 119
" , White ____ 119
Gunwood ____ 32
Gymnocladus dioicus ____ 97
Hackberry ____ 73
" , Rough-leaved 73
" , Southern ____ 74
" , Western ____ 73
Halesia carolina ____ 122
Haw, Black ____ 133
" , Blue ____ 91
" , Red ____ 91
" , White ____ 91
Hawthorn ____ 91
Hedge Apple ____ 77
Hercules-Club ____ 102, 116
Hickory, Arkansas Black 41
" , Big Bud ____ 40
" , Bitternut ____ 37
" , Black ____ 41
" , Kingnut ____ 39
" , Mockernut ____ 40
" , Nutmeg ____ 36
Hickory, Pignut ____ 37
" , Red ____ 40
" , Scalybark ____ 38
" , Shagbark ____ 38
" , Shellbark ____ 38-39
" , Swamp ____ 35
" , Water ____ 35
" , White ____ 40
" , White Heart ____ 40
Hicoria alba ____ 40
" *aquatica* ____ 35
" *buckleyi arkansana* ____ 41
" *cordiformis* ____ 37
" *laciniosa* ____ 39
" *myristicaeformis* ____ 36

Page

" *ovata* ____ 38
" *pecan* ____ 34
Holly, American ____ 99
" , Deciduous ____ 100
" , Emetic ____ 101
" , Evergreen ____ 99
" , White ____ 99
" , Yaupon ____ 101
Honeylocust ____ 93
Hophornbeam ____ 43
Hornbeam, American ____ 42
Huckleberry Tree ____ 120
Ilex decidua ____ 100
" *opaca* ____ 99
" *vomitoria* ____ 101
Indian Cherry ____ 113
Ips Beetles ____ 4
Ironwood ____ 42, 43
Judas Tree ____ 92
Juglans cinerea ____ 33
Juglans nigra ____ 32
Juneberry ____ 87
Juniper, Ashe ____ 2
Juniperus ashei ____
" *mexicana* ____
" *virginiana* ____
Kentucky Coffeetree ____ 9
Kingnut Hickory ____ 39
Koelreuteria paniculata 112
Lime ____ 114
Linden, American ____ 114
Linn ____ 114
Liquidambar styraciflua 85
Liriodendron tulipifera ____ 82
Loblolly Pine ____ 21
Locust, Black ____ 96
" , Honey ____ 93
" , Sweet ____ 93
" , Thorn ____ 93
" , Water ____ 94
" , Yellow ____ 96
Longleaf Pine ____ 22
Maclura pomifera ____ 77
Magnolia acuminata ____ 78
" *grandiflora* ____ 81
" *tripetala* ____ 79
" *virginiana* ____ 80
Magnolia, Cucumber ____ 78
" , Southern ____ 81

Page

" , Swamp ____ 80
" , Sweetbay ____ 80
" , Umbrella ____ 79

Maidenhair Tree ____ 27

Malus angustifolia ____ 96
" *ioenis* ____ 90

Maple, Ash-leaved ____ 108
" , Black ____ 105
" , Hard ____ 105
" , Red ____ 106
" , River ____ 107
" , Rock ____ 105
" , Silver ____ 107
" , Soft ____ 106, 107
" , Sugar ____ 105
" , Swamp ____ 106
" , Three-leaved ____ 108
" , Water ____ 106, 107
" , White ____ 105, 106, 107

"Maple", Silver-leaf ____ 30

Melia azedarach ____ 104

Mimosa ____ 95

Mockernut Hickory ____ 40

Mock Orange ____ 77

Morus rubra ____ 75

Mossy Cup ____ 50

Mulberry, Common ____ 75
" , Red ____ 75
" , Paper ____ 76

Musclewood ____ 42

Northern Catalpa ____ 131

Northern Red Oak ____ 54

Nutmeg Hickory ____ 36

Nyssa aquatica ____ 119
" *sylvatica* ____ 118

Oak, Arkansas ____ 62
Oak, Basket ____ 53
" , Black ____ 57
" , Blackjack ____ 61
" , Bluejack ____ 65
" , Bur ____ 50
" , Cherrybark ____ 56
" , Chinkapin ____ 52
" , Cow ____ 53
" , Duck ____ 63
" , Finger ____ 55
" , Jack ____ 61
" , Laurel ____ 66
" , Mossycup ____ 50
" , Northern Red ____ 54
" , Nuttall ____ 59
" , Overcup ____ 51
" , Pin ____ 58, 63, 64
" , Possum ____ 63
" , Post ____ 49
" , Quercitron ____ 57

Page

" , Red, Northern ____ 54
" , Southern ____ 55
" , Ridge ____ 61
" , Scrub ____ 61
" , Shingle ____ 66
" , Shumard ____ 60
" , Southern Red ____ 55
" , Spanish ____ 55
" , Spotted ____ 60
" , Swamp Chestnut ____ 53
" , Swamp Red ____ 56, 58
" , Swamp Spanish 56, 58
" , Swamp Willow ____ 64
" , Texas ____ 60
" , Water ____ 58, 63
" , White ____ 48
" , Willow ____ 64
" , Yellow ____ 52, 57

Oak Wilt Disease ____ 4

Oaks, The ____ 47

Ohio Buckeye ____ 109

Osage-orange ____ 77

Ostrya virginiana ____ 43

Ozark Chinkapin ____ 46

Ozark White Cedar ____ 26

Paper Mulberry ____ 76

Paradise Tree ____ 103

Parasoltree, Chinese ____ 115

Paulownia tomentosa ____ 132

Paulownia, Royal ____ 132

Pawpaw ____ 83

Pecan, Bitter ____ 35
" , Blasted ____ 36
" , Sweet ____ 34

Pepperidge ____ 118

Persimmon ____ 121

Phloem Necrosis ____ 4

Phoenix-tree ____ 115

Pignut Hickory ____ 37

Pine, Arkansas Soft ____ 20, 21
" , Loblolly ____ 21
" , Longleaf ____ 21, 22
" , Oldfield ____ 20, 21
" , Shortleaf ____ 20
" , Slash ____ 23
" , Southern ____ 22, 23
" , Southern Yellow 20, 21

Page

" , Swamp ____ 23
" , Yellow ____ 20

Pinus caribaea ____ 23
" *echinata* ____ 20
" *elliottii* ____ 23
" *palustris* ____ 22
" *taeda* ____ 21

Planera aquatica ____ 72

Planertree ____ 72

Plane Tree ____ 86

Platanus occidentalis ____ 86

Plum ____ 89

Poplar, Eastern ____ 28
" , Silver-leaved ____ 30
" , Swamp ____ 29
" , Tulip ____ 82
" , White ____ 30

Populus alba ____ 30
" *deltoides* ____ 28
" *heterophylla* ____ 29

Possumhaw ____ 100

Possum Wood ____ 121

Prickly Ash ____ 102

Princess Tree ____ 132

Prunus americana ____ 89
" *serotina* ____ 88

Quercus alba ____ 48
" *arkansana* ____ 62
" *borealis maxima* 54
" *cinerea* ____ 65
" *falcata* ____ 55
" *falcata leucophylla* ____ 56
" *falcata pagodaefolia* ____ 56
" *imbricaria* ____ 66
" *incana* ____ 65
" *lyrata* ____ 51
" *macrocarpa* ____ 50
" *marilandica* ____ 61
" *michauxii* ____ 53
" *muehlenbergii* ____ 52
" *nigra* ____ 63
" *nuttallii* ____ 59
" *palustris* ____ 58
" *phellos* ____ 64
" *prinus* ____ 53
" *rubra* ____ 54
" *shumardii* ____ 60
" *stellata* ____ 49
" *velutina* ____ 57

Page

Red Birch ____ 44
Redbud ____ 92
Redcedar ____ 25
Red Gum ____ 85
Red Hickory ____ 40
Red Maple ____ 106
Red Mulberry ____ 75
Red Oak ____ 54, 55
Rhamnus caroliniana ____ 113
River Birch ____ 44
River Willow ____ 31
Robinia pseudoacacia ____ 96
Rough-leaved Hackberry 73
Royal Paulownia ____ 132
Rusty Blackhaw ____ 133
Salix nigra ____ 31
Sap Gum ____ 85
Sapindus drummondii ____ 111
Sarvis ____ 87
Sassafras ____ 84
Sassafras albidum ____ 84
Serviceberry ____ 87
Shadblow ____ 87
Shadbush ____ 87
Shagbark Hickory ____ 38
Shellbark Hickory ____ 38, 39
Shortleaf Pine ____ 20
Silk Tree ____ 95
Silverbell ____ 122
Silver Maple ____ 107
Silver-leaf Poplar ____ 30
Slash Pine ____ 23
Soapberry, Western ____ 111
Southern Blackhaw ____ 133
Southern Cottonwood ____ 28
Southern Cypress ____ 24
Southern Pine ____ 22, 23
Southern Prickly-ash ____ 102
Southern Red Oak ____ 55
Sparkleberry, Tree ____ 120
Spikenard Tree ____ 116
Sting Tongue ____ 102
Sugarberry ____ 74

Page

Sugar Maple 105

Swamp Ash 127
" Chestnut Oak ... 53
" Cottonwod 29
" Cypress 24
" Hickory 35
" Magnolia 80
" Maple 106
" Pine 23
" Poplar 31
" Privet 124
" Willow 31

Sweetbay 80

Sweetgum 85

Sweet Pecan 34

Sycamore 86

Taxodium distichum 24

Tear-Blanket 102, 116

Tent Caterpillars 4

Thorn Bush 91

Thorn Locust 93

Thorn Tree 93

Tilia americana 114

Tilia glabra 114

Tilia floridana 114

Toothache Tree 102

Toxylon pomiferum 77

Tree of Heaven 103

Tree Sparkleberry 120

Tulip Poplar 82

Tuliptree 82

Tupelo, Black 118

Tupelo, Water 119

Ulmus alata 69
" *americana* 67

Page

" *crassifolia* 70
" *fulva* 68
" *pumila* 71
" *rubra* 68

Umbrella Magnolia 79

Umbrella Tree 79

Vaccinium arboreum 120

Varnish Tree 112

Varnish-tree, Japanese 115

Viburnum rufidulum 133

Walnut, Black 32
" , White 33

Water Beech 42
" Birch 44
" Elm 72
" Hickory 35
" Locust 94
" Oak 63
" Tupelo 119

Western Soapberry 111

White Ash 125
" Elm 67
" Hickory 40
" Maple 105, 106, 107
" Oak 48
" Poplar 30
" Walnut 33

Willow, Black 31

Willow Oak 64

Winterberry 100

Wooly Buckthorn 123

Yaupon 101

Yellow Cedar 26

Yellow Poplar 82

Yellowwood 98

Zanthoxylum americanum 102
" *clava-herculis* 102